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PROFESSOR JAMES'S THEORY OF KNOWLEDGE.

I BELIEVE most readers who have followed the recent discussions about Pragmatism would agree that they leave something still to be desired in the way of a determination, clearly defined and consistently held to, of what the precise point at issue really is. The present article will have to do only with Professor James's position, as represented by his recent articles in *Mind* and in the *Journal of Philosophy*. I shall try to indicate the queries which these leave with me personally, assuming that I am not alone in needing further light on the matter. I shall dwell only upon the particular points which are most puzzling to me, with the intent to discover, rather than refute, his position.

Professor James begins in the October (1905) article in *Mind* by distinguishing his own early doctrine of pragmatism from the more ambitious theory of reality with which the word has now become identified. This said no more than that truth must have some practical consequences to be worth discussing. If it makes no concrete difference to any one which of two statements be true, then there is really no difference between them. There is naturally some danger in the application of this doctrine, unless it be interpreted in a very sympathetic and catholic spirit. What shall be called a *practical* difference is a nice question; and, without doubt, the criterion may be used by the practically minded man as a club for dealing summarily with any matter of theory whose direct bearing he does not himself appreciate. Still I should myself, on a broad understanding of it, freely accept this aspect of pragmatism, and, therefore, I do not call it in question

here. I believe most strongly that the only way to keep sanity in our mental life is to recognize frankly the thorough-going connection between thought and conduct, and that whatever cannot be seen in the long run to enrich the concrete meaning of life, as this goes beyond the pure exercise of the intellect, will inevitably be discarded in the growing process of experience.

The newer Humanism is defined by Professor James as the further doctrine that truth *consists* in the consequences. But, before inquiring about this, there is one other aspect of the movement that should be clearly distinguished. It has a further methodological side about which also, I think, there need necessarily be no very serious dispute; at any rate, I am not inclined to dispute it. And as this has no apparent logical connection with any particular theory of reality, the two things ought not to be confused in discussion. This aspect of the method consists simply in the application of a genetic psychology, in terms of human ends, to the growth of our knowledge. It holds that our growing experience is guided in a teleological way. We come to take this or that view of reality, because it furnishes a means for giving expression to certain definite needs. Thus beliefs are hypotheses, adopted in the interests of these conscious or unconscious demands of life, held to because in some measure they meet the requirements, and modified and extended gradually till at length the complicated structure of our present intellectual world has emerged. And by looking back to its historical genesis, and interpreting its finished product in the light of its function, we get a better understanding of the nature of truth and of the thinking process.

The significance of this attitude I am very far from questioning. But I think that it should be clearly distinguished, as a method, from the further and metaphysical consequences with which in pragmatism it has been connected. Matters have been unnecessarily confused by mixing the two things together, and using the natural appeal which the first makes to our belief to justify the second also. But, as a matter of fact, the method may perfectly well be used without its committing us to the conclusion that it represents also the whole ontological fact. How

I arrive at my knowledge, is one question; what is the nature of the reality which I know, may very well be quite another. And the fact that I arrive at it by a series of guesses and experimental tests, guided by instinctive needs, might be entirely consistent with the separate existence of the object of my knowledge, reproduced more or less exactly in my individual consciousness. If, then, pragmatism be taken as really a new philosophy — and the claim certainly is being made for it — the essential point of its divergence from the older view would seem to be this: that reality is actually in every sense created in the growing process of human knowledge. Reality *is* this process of experience, and there is nothing beyond. It is to this, or rather to the question how Professor James interprets this, that I wish, therefore, to confine myself.

In the first place, it is of some importance to know whether the statement that truth consists in the consequences, and that reality is created by our judging thought, is to be taken as absolute, or only as a partial aspect of truth. For, again, if the last is meant, we do not necessarily have a new or exclusive philosophy. For I judge that everyone would admit that in *some* sense our thought adds to reality. Professor James seems to yield here to the temptation of a too easy victory over opponents, when he attributes to them the doctrine that the *sole* business of our minds with realities is to copy them. If the only alternative of pragmatism is to hold that knowledge is a *mere* copying, then I am assuredly a pragmatist. But I doubt whether it would be any easier to find nowadays one who maintained the doctrine that knowledge is a *mere* copying, than to find the *mere* pragmatist whom Professor James regards as a figment of his critics' imagination. It is, once more, an undoubted advance to recognize the reality of the interplay between our knowing selves and the world we know. Our knowledge certainly does something; and this something can hardly be entirely irrelevant to the object of knowledge. The complete account of the object would have to include this new relationship. But it *may* be, also, that this is not in any manner inconsistent with the existence of another as-

pect of knowledge, according to which it involves a recognition of what already is in existence, and is not made by thought. So that it is necessary to be clear about the limits of the creative power of thought, before we can discuss intelligibly a philosophy of which this is to be made the distinctive feature.

On the surface, Professor James's statements are not wholly unambiguous, particularly in his article in *Mind*. "That this drift of experience itself is due to something independent of all possible experience, may or may not," he says, "be true."[1] "Whether the Other has itself any definite inner structure; or whether, if it have any, the structure resembles any of our predicated *whats*, this is a question which humanism leaves untouched."[2] If our own particular thought were annihilated, the reality would still be there, though *possibly* in a shape that would lack something that our thought supplies.[3] In view of the uncertainty of statements like these, I shall try first to analyze the situation a little, and to distinguish certain positions which I judge that the pragmatist might assume; and I will start from the most extreme expression of pragmatism — that each individual makes his own truth, and makes it in accordance with his own arbitrary pleasure. This is, of course, repudiated by pragmatists generally; but since it is a position at least capable of definite formulation and easy to to understand, there is an advantage in taking it as a point of departure.

Now, in opposition to such a conception, there are two things, at any rate, which I understand Professor James to maintain. There is, first, reality to be taken into account other than our own personal experiences and beliefs (this takes more positively the form of 'other experience'); and, second, the process of growing truth is not indeterminate, but follows more or less definite paths independent of our arbitrary will. But the use made of these claims I do not fully comprehend; and as they are in some degree independent motives, which yet are closely entangled in Professor James's exposition, I find it not altogether an easy

[1] *Mind*, Vol. XIII, p. 463.
[2] *Ibid.*, p. 462.
[3] *Ibid.*, p. 463.

matter to set forth the nature of my difficulties. I shall try, however, to indicate these, and I may take the last of the two motives to begin with, relating the other to it as well as I can.

To go back for a moment, the essential point of pragmatism as a complete philosophical system is, so far as I can see, this: That the qualifications of reality are actually made in every sense of the term, and first become actual, in the growing process of human experience, the qualifications which we call true differing from those we call false solely by their practical satisfactoriness. There is, accordingly, no need, in explaining the fact of knowledge, to call in for purposes of explanation any contemporaneously existing reality whatsoever, regarded as independent of the knower. And in so far as we do admit such an existence, we are not pragmatists, and are tampering with the purity of a pragmatic view of the world. The main problem, then, for pragmatism, is to explain the determinations of psychological experience without going beyond that experience itself.

What, then, concretely is the meaning and proof of this claim. I think it may fairly be contended, to begin with, that it is not enough simply to point to the fact that the process of experience is actually to an extent determinate and constrained, in order to overcome the force of the objection that on the principle of pragmatism it ought not to be so. Professor James seems to come pretty close to such an implied procedure.[1] Now, of course, everyone admits the fact of constraint within experience. But also the fact is that among these determinations there are some which seem to our natural thought explicable in immanent terms, and some which do not. What needs to be done, therefore, is to show that the latter cases can be reduced in an intelligible way to the former; merely to appeal to the fact of determination is to beg the question.

Now the first and most obvious way of explaining determination is by making use of the undoubted fact that the structure of the mind is moulded by past experience into definite forms of perception and interpretation. This is a principle which is relatively clear and unambiguous. Furthermore, the right may be

[1] *Loc. cit.*

granted to extend this by means of the concept of heredity. There is, of course, some difficulty in carrying the continuity of experience from one generation to another, but this need not be pressed. So far as experience is a continuous line which transmits results to succeeding experience, the principle will come in play. But now it seems evident that, taken by itself, the explanation has a strictly limited field. It will not, unless extended in some unexplained manner, account for the aspects of novelty and of apparent contingency in life, and it is these which are of course the points that most need explanation.

There is another way in which the field of explanation may be enlarged. For we find reference not only to the past as a means of determination, but also to the future.[1] I should be inclined to distinguish two possibilities in the way of interpreting this, though I do not feel quite clear that Professor James makes the distinction, or would allow the second of the two. What he does bring forward explicitly is the doctrine of implied existence. Thus the number seven is implicit in the experience of the dipper constellation. It is not actual until some human mind counts the stars, but even before the counting the conditions of the result were present. The stars were actually seven, in that they must appear so whenever the question came to be asked.

To this conception also I shall not, in a general way, object. But there are several things which I think need to be said about it before we build much upon it. For it does not naturally, any more than the other, apply to any save a limited class of truths; and the cases where it fails are again those which are chiefly at issue. Certain qualities are implicit in a psychological experience which may afterwards, when they are attended to, be recognized as in some sense already there before they were noticed. Certain logical conclusions may be actually involved in premises, and yet not be drawn; and we say they really were there all the time. Or, again, granting the knowledge of certain facts, comparisons of various sorts between them are possible which only await the action of a comparing mind; and when the result appears, we recognize it as grounded in the facts themselves as they

[1] *Mind*, Vol. XIII, pp. 463, 472.

were already known. All this is fairly intelligible. Assume the facts as experienced to begin with, and knowledge about them which is afterwards brought to light may often be regarded as implicitly present. But neither the experiences, nor the active and productive aspects of their relationships, are implicit in anything like the same sense. The explanation may, perhaps, apply to the number of the stars in a group, but not to the appearance of the stars themselves. When these first present themselves to human vision, they are something quite new, which cannot be said in any natural way to grow out of past experience or to be implicitly present in it. It may apply to the comparison of a group of stars to a great bear, but it does not naturally apply to the effect which one heavenly body has upon the orbit of another.

But now, secondly, there is a way in which all aspects of reality, even the new and apparently fortuitous elements, might be said to be implicit in experience. But it is with a wholly different meaning, and a meaning which is frankly metaphysical rather than scientific. We may hold, that is, the conception of experience as an absolute system, including present, past, and future, which constantly is budding out into new manifestations of reality. Every new fact is, therefore, implicit in experience. But such a statement means simply that the mere fact that it appears is taken as proof that it belongs to the system which we have identified with reality. It need not, however, be seen to be implicit from the human point of view. But this is to give up all that concretely we mean by an appeal to experience. A reference to future experience which does not involve the ability, when the new fact arises, of detecting concretely its possibility in the known past, is merely an appeal to the fact without explanation.

So far as I can understand, then, an immanent philosophy is left with the two foregoing principles, and these alone, by which to explain concretely the determinations of experience. Whether they serve the purpose sufficiently seems to me very doubtful. Personally, I do not think the pragmatist gives sufficient weight to the insistence of the problem that arises in connection with that apparent character of sensation through which it seems de-

termined from the outside. To take the mere fact that the sensation does actually appear, or even the added fact of its relation (sometimes, not always) to psychological ends in connection with which we are anticipating it, seems to me simply to be closing one's eyes to the problem and doing without an explanation. However, if one does not feel this, I suppose it is useless to insist upon it. I will only insist that it is desirable to choose our side definitely, and then stick to it, that we may all know where we stand. One who is proposing a new philosophy can hardly refuse to pronounce plainly upon an alternative which is the very point in controversy. Particularly puzzling to me, on the pragmatist hypothesis, are the passages in which Professor James deals with our common attribution of permanence and past existence to things,[1] as when he says that some things, if we ever suppose them, must be supposed to have existed previously to the supposing. If he really means by this what he seems to say, then, though he parts company with the metaphysical pragmatists, I am glad to think that he agrees with all that I should want to maintain. But I cannot interpret his words on the consistently pragmatic basis. In what way are we necessitated to think that which by the terms of the theory would seem to be the opposite of the truth? On the grounds so far brought into view, the common belief is only a practical convenience, a *taking as if* permanent and continuous. But there are complications when this tendency results in the use of a conception which contradicts the standpoint out of which it grows, and I do not understand the attitude of the pragmatist if he attempts the conbination. He may mean merely to take it on occasion as true for practical purposes, recognizing its unreal character in reflective moments. But, in that case again, I fail to see the pragmatic basis on which this last denial is to be made. If pragmatism as a practical working force in experience pronounces in favor of the common beliefs, in what sense is there any ground left for accepting the quite opposite opinion to which pragmatism as a theory leads. On pragmatic principles of usefulness it would seem to be lacking in the essential characteristics of truth. Or

[1] *Mind*, Vol. XIII, p. 464.

if it still is true in theory though contrary to our practical convictions, how are we to escape the outworn conception of a truth that is true no matter what we believe? A pragmatist in method merely would have no difficulty. It would be quite possible to say: The concept of permanence and substantiality arises indeed out of practical needs; but, though it arises as an hypothesis, it yet is independently true and I accept it as such.

In what precedes I have tried to indicate my belief that a consistently immanent philosophy involves only a serial line of influence, and has no place logically for a contemporaneous reality. The determination which it allows is, whatever its nature, at any rate in terms of a succession within a single system of conscious experience, and it cannot hold between a fact of knowledge and some other coexisting fact. For, on the one hand, coexistence makes it out of the question that the reality should be created by the knowing experience, as the strict consistency of the theory seems to demand. And, furthermore, if such a reality does exist and is referred to in our knowledge, it seems somewhat captious to deny to it all share whatever in the explanation of the knowing experience. At least, it would apparently exercise some control over the guesses at truth which arise within experience, by helping select out those that are able to work.

Now I do not really suppose that Professor James would accept the full position which has here been set down as pragmatic. Apart from ambiguities, there seem to be enough assertions to the opposite effect to make his general attitude plain. He allows apparently, as has been said, for the validity of retrospective judgments. He seems to grant the reality of the object beyond knowledge.[1] At least this is true of other selves, whose lives, existing beyond the knowing act, are recognized as veritable realities; and this is enough to establish in principle all that I am concerned with here. The theory of pan-psychism, again, with which Professor James appears on occasion to be coquetting, certainly involves a coexisting object alongside the act of knowledge. Seemingly, then, all that he is really trying to maintain is this: That *some* knowledge, though not by any means all, adds

[1] *Cf. Journal of Philosophy*, Vol. II, p. 116.

to reality.[1] Even here Professor James fails to note clearly a distinction which I think is important. He uses as an argument the undoubted fact that knowledge enables us to act, and so to change reality.[2] But the claim was that knowledge, *as* knowing, creates reality, and it is not evident how this bears upon such a claim. That knowledge has *results* is what any philosopher might, probably any philosopher would, be glad to admit. But common sense would hold that it is just because knowledge as such does not add to the facts, but recognizes them as they are, that it is able to lead to effective changes. Personally, I am inclined to think that these changes which knowledge produces, not as belonging to its own meaning and intention, but as further consequences in the way of action, would meet all the requirements, and enable us to class all knowledge as retrospective. When, for instance, I count the stars of the constellation and call them seven, what has my knowledge added to the real objects? The act of counting is a new fact. So too, it may be, is a particular use of the word 'seven.' But neither of these are intended in the judgment itself. What we do mean by the judgment seems to me as clearly retrospective for the ordinary consciousness as the examples which Professor James would allow to be such. Of course every new judgment adds something to reality *as represented in human knowledge*. But such novelty is simply the concern of psychology. To make it directly significant for philosophy one must, I take it, make the complete identification of growing knowledge and reality itself, and set aside the retrospective aspect; and this is what I understand metaphysical pragmatism to do. However, the point is for my present purpose not essential. If even *some* knowledge is truly retrospective, it fixes Professor James's position sufficiently for the argument in hand.

Perhaps now, in view of this result, the foregoing analysis of pragmatism may seem to have turned out to be irrelevant, if Professor James cannot be accused of holding such a doctrine. I think not, however. Professor James is an important figure in

[1] *Mind*, Vol. XIV, p. 193.
[2] *Ibid.*, Vol. XIII, p. 473.

the world of philosophy, and it is worth while to know as clearly as possible to what scale his authority is to lend weight, and how much weight it lends. What I have tried to indicate is that there exists a clearly defined philosophical position which may be held as complete in itself. Professor James has sometimes given occasion for the belief that he is an adherent of this theory. Some of his colleagues at any rate, with whom he classes himself, would appear actually to hold it, *e. g.*, Professor Dewey. This theory maintains that the object of knowledge is to be wholly explained by the method of a teleological and functional psychology. The element of control in experience is to be regarded as entirely immanent, and so again recourse can be had to no principles which are not psychologically grounded. Professor James has so much in common with this tendency, both in method and in details of explanation, that he is bound to make it clear just how far he goes with it and where he stops. For the moment he abandons the purity of the pragmatic principle, there arise for him problems which he cannot refuse to face. Professor James says, for example, that about the nature of the object, supposing it exists, and whether it resembles our idea or no, humanism has no need to inquire.[1] But this is a compromise which seems to me quite untenable. As strict pragmatists the independent object does not exist for us at all; and so, of course, there is no question about its nature. But if it is allowed in any case to exist, what right have we as philosophers to decline the attempt to understand how its nature is to be understood? We have a real problem, and it is well to keep clearly in mind, too, that it is a quite different problem from the one that meets pragmatism, and has to be solved by a different method. For pragmatism, it is a matter of *explaining* the object, accounting for it in the full sense; for pan-psychism, for instance, of interpreting the nature of an object already supposed to be in existence.

I am going to assume, then, that Professor James believes in objects of knowledge in the sense I have tried to explain. I wish now to turn to a second point in his recent articles—which is a closely connected one — his analysis of this knowing experience.

[1] *Op. cit.*, p. 462.

I have myself found his treatment very illuminating, and I have practically adopted it here, or my understanding of it, for again I recognize that I may have failed throughout to get his meaning. And here also I find myself perplexed because I seem to see Professor James engaged from time to time in a polemic against what I should suppose were the natural consequences of his own position. It is to this, then, that I wish next to direct attention.

Professor James's earlier analysis, recently reproduced by Professor Strong, amounts to this: that knowledge can be reduced to resemblance which leads to beneficial reaction towards an object.[1] I am ready to accept this as far as it goes. In so far as it is meant to emphasize the fact that in ordinary sense-perception, for example, we have no consciousness of two things, object and copy, it obviously represents the truth. But also it seems clearly to fail to cover the whole situation. For the very statement implies that really there is a representation or copying there, and that we are able somehow to recognize this in knowledge. The explanation is, of course, that this recognition belongs not to the original act, but to a later and reflective one. This also I accept. Criticisms of the representative theory lose a good deal of their pertinency by assuming that it must be identified with this faulty analysis of the original experience. Of course, historically this is in part justified. But the real motive back of the theory has usually been its further implications about the nature of the world which we know. If we can retain these implications, the special epistemological form of the theory is not of great importance. In counting myself an adherent of the representative theory of knowledge, I shall wish therefore to be understood as holding that it is true as an outcome of reflective thought, and not as an account of the primitive anatomy of the direct experience of knowing.

In recent discussions this function of reflective thought has been emphasized, but its bearings have, in my opinion, often been misinterpreted. To revert for a moment, let me consider for example in the light of it the use of the term 'experience' which pragmatism makes. There is undoubtedly a sense in which all

[1] *Journal of Philosophy*, Vol. I, p. 254.

reality comes to us as experience. But in this sense we do not talk or philosophize about it; we simply live it. As an immediate living present fact, it is always in Professor James's phrase 'pure' experience. In order to become philosophers, pragmatic or otherwise, we have to translate this entire reality into reflective terms. For us as philosophers the world is what we think it to be. The character we assign to it is the character which it gets in reflection. It is illegitimate, as it seems to me, to go back to the original pure experience, and because we do not find a certain distinction there to deny the distinction forthwith. This is to dip back again into mere living, to cease to philosophize by ceasing to trust to the results of reflection, and so to attempt an impossible mingling of two radically distinct attitudes. That is true for us, again, which is true for reflective thought. If thought did not add something true which we had not recognized as true before, we might as well have rested in our immediacy.

Now to apply this to the reality of 'experience.' When we are content with experience as the final word in philosophy, we either, it appears to me, mean something definite, and then the satisfactoriness of our explanation is questionable, or else we mean something entirely indefinite, and are simply ignoring problems instead of explaining them. When I speak of experience in a clear and verifiable sense, what do I mean? Always, I think, actual experience as it exists for me or for some other similar human being. For reflective thought, experience takes concretely the form of *psychological* experience. Into this flow of a connected life-history, everything to which my reflective thought naturally gives the name experience — pure experience, objective experience, subjective experience all alike — enters to form a part. The fact that a bit of pure experience did not recognize itself as mine, does not hinder me, in looking back upon it, from calling it mine. The essence of the term in the natural understanding is just this psychological connection which can be read back into it as existing between its successive stages. And this psychological connection is precisely what the pragmatist of Professor Dewey's type utilizes as the ultimate method of explanation.

But, now, if we still keep to the reflective stage, we must recog-

nize that there are many other objects of knowledge which we do not naturally call experience in this same sense. Experiences are only a part of the field of knowledge; along with them are many other things which we never think of as having any identification with psychology. Once more, we may say in a certain sense that we get them through 'experience.' But it is a different sense. We have gone back to our naïve unanalyzed meaning. For thought, things stand over against experiences. They are in a wholly different sort of connection. The indiscriminate appeal to experience is, therefore, almost certain to be confusing; for it almost always involves the transfer of a method got from what for reflection is only a part of reality, to what for reflection is a larger whole, while at the same time it utilizes the ambiguity of terms to ignore the distinction and deny that it exists. To content oneself with saying that, if not experience, it is at least *possible* experience, is to ignore this source of confusion. If it means literally that the object is *no more than* a future experience of mine, it is, indeed, consistent — consistent with the point of view which makes the psychological method final, by throwing out all the other reality which, in reflecting upon the world, we place alongside the reality of experience. But Professor James appears to mean more than this, and the moment he does mean more he ceases to be giving an explanation at all. Every reality that does not connect with my psychological experience in a psychological way is left unaccounted for. Experience stands for no more than what other people have always been accustomed to call reality, and this has commonly been supposed to represent the problem, not the solution. The statement that reality is 'experience,' then, means, either the truism that everything we have any right to consider real must somehow come within our range of experience, that nothing can be known to us which does not become an object of our knowledge; or else it is a leap without argument to a particular form of old-fashioned idealism, according to which we interpret a reality which we cannot get at directly as after all made of the same essential stuff as ourselves.

This, however, is in part a digression. What I chiefly wish to

consider is the outcome of Professor James's further analysis of knowledge. And it may be noted that the preceding account seems to recognize clearly the actual existence of an object beyond knowledge. It is the possibility of our being able to recognize this which has, therefore, in addition, to be examined, before we have a complete statement. This Professor James's later theory seems to me to accomplish. I myself accept the position as I understand it. My only purpose is to raise the question: Why the constant attack upon transcendence? To me the possibility of transcendence, in the only sense there is any reason to maintain it, seems a necessary part of the position.

What, then, do I mean when I say I know a given thing? Partly, at least, I mean that I am able to take account of it practically. I have habits of action with reference to it, and I can anticipate from the limited number of characteristics actually present to my senses the other characteristics that are to be expected under various circumstances, and can act accordingly.

In this statement there are two points involved — the habits of appropriate action, and the anticipation of definite experience. The strict pragmatist seems to me to look too exclusively to the first of these. It represents undoubtedly an aspect of knowledge. We do not really know anything until we know how to act with reference to it, and the sense of appropriate outgoing tendencies unobstructed is important for our consciousness of familiarity. It is not on the ground that it is wrong, but that it is one-sided, that exception is to be taken to the position. There is another and inner aspect of knowledge which refuses to be exhausted in terms of action, at least the sort of action that looks solely to the practical use to be made of the knowledge. This is the conscious reference which is present in the ideal anticipatory function, and which Professor James sets out to explain as the feeling of conscious transition.

The word 'anticipation' suggests the point at issue. I cannot see how any rendering of the facts can get away from the necessity for supposing a real ability to look forward into the future, to refer to something which is recognized as not yet a matter of direct experience; and the existence of such an anticipatory image

is all that it seems necessary to postulate in order to satisfy the legitimate claims of transcendence.

As I sit in my chair, I think of a book-case in the neighboring room. There is in this experience itself no diremption. My consciousness is simply the consciousness of book-case — a piece of 'pure' experience. When, however, I begin to examine it introspectively, I can point out its psychological structure, and this structure we may assume to consist essentially, as Professor James says, of a more or less vague image *plus* certain feelings of transition.[1]

Now these feelings are, so far, not of actual but of ideal transitions, and very probably they involve no clear sense of a definite goal. We might, I should say, even at this stage, call the experience knowledge. But it is true that, if our experience had never gone beyond this, our description would remain necessarily incomplete. The end and verification of knowledge, at least, is the actual termination of these feelings of transition in an issue marked by the sense of satisfaction and attained meaning, as when I rise and walk into the next room and get the actual perception. This terminal feeling is undoubtedly another and important datum. I think that Professor James's use of it, however, is a little questionable. He seems to hold that knowledge as an experience is to be put primarily in terms of these actual transitions to the end and the end itself, as if the experience of knowing did not really exist till the feelings of transition lost themselves in the actual terminus.[2] Certainly, however, my actual movements into the next room are not necessary for a knowing experience. Nor do I feel clear that the sense of attainment either is an essential. Rather I should be inclined to say that it marks the point where knowledge ceases as such, and passes into something else — a new and direct experience, which may, of course, also be the starting point for new feelings of transition. In knowing as such, the sense of transition seems to me typically ideal and anticipatory, rather than completed.

Nevertheless, I grant that the sense of finished transition is

[1] *Journal of Philosophy*, Vol. I, p. 539.
[2] *Ibid.*, pp. 539–541.

needed for the completer description of knowledge. But I should prefer to state it as follows: If my experience of knowing is purely naïve, as I have supposed it to be hitherto, the description given above will be sufficient. But now, instead simply of thinking of the book-case, I think of *myself as knowing* the book-case. I reflect upon the act not merely as an experience, but as an experience of *knowledge*. I then should naturally tend to put the thing in a slightly different, at least in a more definite way. Two things now come directly within my view: The recognition that there is present to me now the vague idea of an object, *plus* the sense that under certain circumstances I should find this image blend in another and more vivid experience without any feeling of internal discrepancy. This new experience I recognize as a possible real experience, but as still in the future, and consequently as transcending my present knowing experience either in terms of the image, or of the immediately present transition feelings which mediate the knowing. I must, once more, have had an experience of completed transition before I have the data for a complete description of knowledge. But when I have once recognized just what takes place in a case of this sort, I have a sufficient means of interpreting other cases of knowledge, even where a similar issue has not been reached. And it is a description which, as it appears to me, will apply to any case of knowledge, when I reflect upon it *as* knowledge, and do not simply know. But now, as regards the implications of this, there are two or three points which may be noted separately.

First, the whole situation is, as Professor James maintains, describable in terms of experience. There is nothing essentially mysterious save as all experience is mysterious. If the upholder of the representative theory sometimes speaks as though some substantial state of consciousness could by itself get outside its own skin and point to something else — all as a part of its own isolated content — this is only an inadvertence. All that is required is that it shall play the part of an anticipatory image within a wider reach of experience, and this I cannot see how it is possible to refuse to grant.

Secondly, in the description of this experience there is involved

the idea of representation. In *some* more or less adequate way the early part of the experience resembles or copies the conclusion, or else it cannot anticipate it truly.

Finally, I do not see why, as I have said, we are not committed to the idea of transcendency, or why this should not be recognized frankly and unambiguously. And being recognized, it seems to me to furnish all that is required for understanding what is meant by the knowledge even of objects that exist beyond anything that is experience for me. It has been seen that, in thinking an object, there does not need to be the actual transition to the subsequent experience. Rather knowledge as such is essentially a case of *possible* transition, a mental and ideal experience and not one of practical accomplishment. When I think now of my thought as a true idea of the book-case in the next room, I think, indeed, of this thought as possibly issuing in a sense experience. I think of the two as able to blend harmoniously, and get thus a certain sense of fulfilled transition. But the whole process is confined to the realm of thought. But if now I can have a sense that my image *would* under certain circumstances issue in another experience, *e. g.*, a perceptual experience which would fulfill it, without the actual fulfillment taking place; if there may be a recognition that the series has not yet been completed, and that the knowledge is therefore problematic and unverified, there may equally be the sense that it cannot *ever* be completed, that the completion must forever remain apart from the ideal anticipation. When I say that I know a reality beyond experience, I should mean, then, that *if* my anticipatory image were to reach its goal, it would experience the same sense of fulfillment that I get when my thought issues in perception, *but* that I realize that this never will and never can take place. Of course, the question still would remain how we come to make this extension beyond experience, and to adopt the hypothesis of a reality which we never can reach directly to compare it with its anticipation. But the conception itself is neither unintelligible nor essentially mysterious.

I realize that it may again be said: But this break, this diremption, is, after all, not outside experience but within it. I cannot

go back to discuss further the ambiguity in the term experience on which it seems to me this objection is based. But I may call attention to the presence of the ambiguity once more in the discussion of our perception of the separateness of selves, where the extraneousness I am claiming is most indisputably involved. Professor James tries to reduce this to immediate transitional experiences.[1] But the comparison which he makes with the sense of personal identity brings out clearly, I think, the flaw in the argument. We find in this last a sense of smooth and easy transition, whereas in the case of two selves there is a break, an obstruction, and we have to shift from a perceptual to an ideal experience, the sense of the break constituting, according to Professor James, the meaning and actual being of the whole experience of duality. But there obviously is in the two cases a very important difference which cannot be overlooked. When I pass with the sense of unimpeded transition from one experience to another, both the experiences, as well as the conscious transition, are elements of a single conscious continuity. But when I pass to the idea of another self, the reality of the discontinuity cannot in the same way be identified with the feeling of blocked transition. For the very point of the matter is that the feeling does not connect the two terms, but involves reference to a second term which is not present at all. I might feel a jolt to my activity. But in that there would be no question of a second self. To be at all analogous, the other self would have to be — contrary to the original hypothesis — *within* the same continuity with the transitive experience, otherwise this could not be felt as transitive or relational. If the two cases are really on a par, then the *thought* of the other man to which the transition leads *is* the other man; and this I take it is the true outcome of the doctrine.

Actually Professor James seems clearly to believe in a real break, and in a real other self with its thoughts and feelings, into the neighborhood of which our transitive experiences lead, but which they do not actually reach. And if the attempt to put the whole meaning of the knowledge experience in terms of the psy-

[1] *Journal of Philosophy*, Vol. I, p. 536.

chological facts of feeling results here in denying this belief, and so fails to work, the same thing will be true of those other passages in which he tries to get rid of the transcendence aspect in the interest of these same transitive feelings. To this attempt it may, perhaps, be a sufficient reply that he does not himself pretend to be true to his theory, but talks continually in terms that involve the power of transcendence. It would, indeed, be quite impossible to speak articulately did we not presuppose at every step our ability to think of things not at the moment present. To say that knowledge is no more than immediate transitional feelings is not only to deny all reality for me beyond the immediate facts of my psychological experiencing; it is to take away my ability to know even these. The fault, again, seems to me to lie in mixing two points of view. Psychological analysis reveals to me, indeed, the nature of the experience through which I know a given reality. But to take this as identical with the original meaning of my knowing experience is fatal. I have rather added a new object of knowledge, the knowing act, to the former object which I meant or knew. It is an adequate account of all that we can detect in the act as such. But if we allow it to result in the denial of that which underlies all knowledge alike as its original presupposition — that we can in thought have a definite *meaning* — we have brought the whole edifice of knowledge crashing down about our heads.

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CONTINUITY AND NUMBER.

THE problem of continuity enters into mathematics, physics, and philosophy in one guise or another. It seems to have reached a satisfactory solution only in the first-named field, where the theory of continua of higher order, and the Dedekind theory of the nature of irrationals, appear to have brought about that much-desired freedom from paradoxes which the physicist and philosophical geometer cannot attain. These latter investigators are, therefore, justified in investigating the mathematician's solution of the problem in the hope of gleaning some fruitful suggestion or analogy. It is in this spirit that the present study is undertaken, the aim being not so much to produce a mathematical criticism as to find what the bearings may be which the mathematicians' discoveries have upon the philosophical issues centering about continuity. The conclusion we shall reach is strictly a negative one, when viewed from the philosophical standpoint: The concept of continuity appearing in all discussions in the theory of numbers is totally unlike the concept similarly named which appears in geometry and theoretical physics; it is, indeed, not continuity at all that is being spoken of. Accordingly, all higher forms of speculation which make use of the arithmetical concept (higher mathematics and metaphysics of the idealistic school, for instance) must be subjected to revision in the light of our amendments.

In criticising the theory of number we shall — perhaps with some injustice to mathematicians as a class — investigate only the well-known and widely accepted results of Dedekind's studies on the nature of number, which embody the most typical views of modern theorists, generally speaking.[1] The starting-point is the usual one, a statement of the symbolic nature of number. "The number concept," says Dedekind, is "entirely independent of the notions or intuitions of space and time, . . . an immediate

[1] It is only fair to state that some mathematicians, for instance Hilbert, are not content with the Dedekind theories; yet, so far as I can understand their points of difference, none of them are free from the confusion of two or more concepts of continuity.

result from the laws of thought, . . . [numbers are] free creations of the human mind; they serve as a means of apprehending more easily and more sharply the difference of things."[1] To the psychological reader of these words, the distinction between number as an immediately felt *quale*, and number as a sign of this *quale*, is not clearly drawn; it is hardly exact, moreover, to pronounce number, the quantity *quale*, entirely independent of the notions of space and time. With respect to this last point, however, we may well grant the correct intention of the mathematician, which is, it seems, to say that quantity, as such, is neither essentially spatial nor temporal. The concept of number, as expression of pure quantity, is such that the number symbols may be applied to anything which can be discriminated. On this point mathematician and psychologist may readily agree. For the present, we waive a discussion of some other peculiarities of pure quantity which are involved in the current mathematical concept; we may say that quantity is a phase of all thinkable things in some sense or other.

There is a second preliminary point which is not emphasized by the theorists, however, but which is vital to a logical discussion of arithmetical continuity; I refer to the commonplace fact that, if operations are to be performed with numbers in the number-system, whatever the base (= 1) is taken to represent in the particular series of reasonings, that same represented thing must be the sole true element in all groups symbolized by all the other members of the system. The schoolma'am expresses this by saying you must not add two apples to four chairs. I say that the higher theories of number have not given due weight to this fundamental rule of logic; in order to make good this assertion, we need but turn to our theme directly and see the curious results of the neglect in the discussions of numerical continuity.

Turning first to the whole-number series, we find the mathematician saying that this is discrete, full of gaps — in short, a poor apology for a continuum. In order to make it truly continuous, elaborate interpolations must be made; fractions and irrationals

[1] *Essays on the Theory of Numbers*, Engl. transl., p. 31.

must be inserted 'between' integers;[1] whereupon we have a true number continuum of which it may be said that "the four fundamental [arithmetical] operations are always performable with any two individuals in R [the system], *i. e.*, the result is always an individual of R"; and "if a, c are two different numbers, there are infinitely many different numbers lying between a, c."[2] Now, from the way in which the perfect number continuum is built up and from what is said about it, I think it can be shown that mathematicians have not remained true to their first assumptions about the nature of number as a symbol. If it can be shown that interpolation between integers involves a primary logical difficulty, then the notion of arithmetical continuity must undergo revision. I think it can be demonstrated that there is involved the fallacy of equivocation, in that numbers are employed in a single chain of reasoning, with various symbolic values. In order to make this plain, it will prove expedient to explain in what sense a pair of numbers is said to be adjacent or proximate in a continuum.

Let us accept the mathematician's definition of continuity in number: "If the system R of all real numbers breaks up into two classes A_1, A_2 such that every number a_1 of class A_1 is less than every number a_2 of class A_2, then there exists one and only one number a by which this separation is produced."[3] This is stated about all real numbers as a system, *i. e.*, about the real-number system. But it is equally applicable to the system of whole numbers, provided we bear in mind the injunction that the base must have a constant reference in each particular chain of reasonings. For then, if the *number* 1 represents the group θ composed of the single element θ, and if every number in the series represents a group whose elements are θ and hence homogeneous, it follows that there is no group whose elements are each θ whose group-characteristic, *however this may be determined*, is in any sense of the word 'intermediate' between the characteristic of the group of $n\theta$ and that of the group $(n + 1)\theta$. This means that, with a given meaning (refer-

[1] For a very brief popular presentation of the development of a higher continuum, *cf.* Poincaré, *Science and Hypothesis*, Ch. II.

[2] Dedekind, *Op. cit.*, pp. 5 f.

[3] *Ibid.*, p. 20.

ence) for the base (1), every whole number is the unique separator of two classes which comprise the whole whole-number system. We may even go farther and say that, in a certain sense, every whole number is the limit which those two classes approach; but this gives a meaning to the term 'limit,' which is somewhat at variance with its usual mathematical import, so that it is not advisable to urge it. All we wish to insist upon is that, whenever the base is made a true symbol (of anything whatsoever), then n and $n + 1$ are proximates in the system. For if all the groups represented by the numbers of the system are by definition composed of homogeneous elements θ, then no group not thus composed can find a representative number in that system.

Whatever the base symbolizes, therefore, fractional numbers cannot consistently be interpolated in the whole-number series. For, given any base-value whatsoever, such fractions are absolutely meaningless. Hence we may generalize by declaring that interpolation of 'values' between integers is an illogical procedure. It now remains for us to show what the actual and undeniable *meaning* of fractions (and irrationals) is. It will require considerable politeness on the part of the mathematician to listen patiently to the remarks I have to make in elucidation of these points; for it is no trivial thing for him to reject the orthodox proposition that "if α, γ are any two different numbers, then there exist infinitely many different numbers β lying between α, γ."[1] Nevertheless, I think the kernel of truth in this misstatement may be separated from the chaff in such a way that the only kind of 'continuity' and 'infinity' needed by the mathematician will survive the winnowing.

Looking at the nature of the number-base (1) and its symbolic function, we discover that 1 may be taken to represent absolutely anything that can be, in any guise, an object of attention or reference. We must thus speak quite logically and mathematically of 'seven unthinkable things,' for all that is necessary for the mathematician is that he be able to *refer* to them.[2]

[1] *Op. cit.*, p. 19.

[2] We need not be disturbed by the following paradox: It is imposible to number unthinkable things because some unthinkable things are not amenable to the laws of

As every different element θ may serve as real base to the symbol 1, we may say that we have as many possible systems as there are possible elements. By 'system' we mean a genus whose species differ solely with respect to the number of identical individuals (elements θ) which each of these species contains. We are thus barring by definition such things as mixed systems, *e. g.*, those the elements of whose species are heterogeneous or those whose species are determined by some other principle than that of the mere number of identical elements.

With reference to any arbitrarily chosen element θ, we may then say that it can be the measure of all possible systems, because it may be regarded as the 1-group, the 2-group, or the n-group of a system; and, on the other hand, when regarded as the 1-group, each successive 'transform' — *e. g.*, the 2-group, 3-group, etc., having this element as base — may be regarded as a new base for another system. All such systems may then be named with reference to the original arbitrarily chosen basic element; *e. g.*, when θ is base, the system is $N(\theta)$; when θ is the 2-group, the system is $N(\frac{\theta}{2})$; when θ is the n-group, the system is $N(\frac{\theta}{n})$; and again, taking transforms of θ as bases, we have such systems as $N(2\theta)$, $N(n\theta)$, etc. Finally, inasmuch as absolutely anything may be chosen as arbitrary first base, it is clear that every possible pure system is capable of description in such a scheme; but in order to construct a system which shall include absolutely everything numerable, we must take as base for our universal measure simply 'an object of reference,' *i. e.*, 'a thing referred to (by the particular thinker).'

A peculiarity of such a system must now be mentioned. Calling each individual member of the system a 'group' — *e. g.*,

arithmetic. *E. g.*, a thing which, when added to itself once, gives thrice itself as result is an unthinkable thing. The student of logic will perhaps solve this without difficulty. It is then clear that anything which is part of some higher system may equally well be referred to and symbolized by 1. Hence whatever elements of whatever things there are, each one may be the object referred to by unity. And we need not construe elements in the narrow way a physicist or chemist might; we can signify thereby any 'aspect,' 'phase,' 'quality,' or 'fragment' of absolutely anything. Only, in doing this we must be very careful to retain the same base-value throughout every step in our reasonings which have reference to the same subject matter.

1 = the 1-group, n = the n-group — we see that every group may be modified in two different ways:

1. By the addition or removal of n of its proper elements (*i. e.*, of those elements which are identical with the base of the system to which the group belongs), in which case it is transformed into another group of the same system.

2. By the addition or removal of n of the sub-elements of some of its proper elements, whereby the resultant aggregate is no longer a true member of the original system. Assuming as we do in this case that merely some part of an original element is added or removed, we see at once that the resultant aggregate cannot be described in terms of the definitions of the original system, but demands some other basic element. The smallest sub-element that was added or removed must now be taken as the base for that system to which the above-named resultant aggregate properly belongs. The new base must logically be symbolized by unity; but, so long as we are reasoning at once about two systems, the old and the new bases must be distinguished, *e. g.*, by writing them 1 and 1′ respectively. The unity appearing in a fractional expression, it will now be seen, is not the same as the unity appearing in an integral one; the resemblance is a relative one only. Each unity is the base of a different system, and these systems are related in a way wholly accidental to arithmetic.

The logical meaning of incommensurability becomes apparent now, and we refer to it because it probably makes clear the meaning of fractions generally and the bad logic of talking about interpolation of fractional values. To say that 3 and 10 of any given system are incommensurable means that, if the 3-group of that system be taken as base of a new system, then the 10-group does not appear in this new system. This suggests at once that there are two degrees or types of incommensurability, one relative and the other absolute; relative incommensurability is that found between groups neither of which can be converted into a base of any system in which the other appears as a true member; absolute incommensurability, on the other hand, is that found between groups which cannot both be true members of any system what-

soever, be the base of such system what it may. Thus, to say that 1 and $\sqrt{2}$ are incommensurable means that, whatever the the base may be (symbolized by 1), no $\sqrt{2}$-group appears in the system built up on this base. This is absolute incommensurability, because it lacks a characteristic of relative incommensurability, namely, commensurability in terms of some base other than the particular groups (numbers) termed incommensurable. The process of finding the least common denominator expresses the process of transforming incommensurables of one system into commensurables of another.

Bearing this in mind, we may see from a new standpoint the utter impropriety of constructing a number continuum by interpolation between integers. A fraction is, as Ehrenfels has well suggested,[1] a 'qualified number,' to be distinguished from pure number in that the former contains information about the qualities of the represented thing. That is to say, ½ means 'the 1-group in that system whose base is one of the two like elements in the base of another system previously fixed upon, known, and referred to.' In short, paradoxically enough, ½ means 1, but 1 of another system; it means 1′, we might more accurately say. Its value is dependent upon that of pure unity, whatever that may chance to be, and it is meaningless save in reference to pure unity. Is it not a logical necessity to conclude from this that fractions do not belong to the same system as integers do, and that the attempt to unite fractions and integers into one systematic continuum at least involves some peculiar, extra-arithmetical assumptions about the material *represented?* This same suspicion has occurred to Poincaré, who has said: "Should we have the notion of fractional numbers if we had not previously known a *matter* that we conceive as infinitely divisible, that is to say, a continuum?"[2] In other words, the arithmetical systems of integers and fractions are suspected of belonging together only by virtue of the nature of the thing symbolized by them. But, curiously enough, it has not been seen that even that most continuous and dissectible object called 'pure quantity' cannot justify the construction of

[1] *Vierteljahrss. für wiss. Phil.*, Bd. XV, p. 308.
[2] *Science and Hypothesis*, Ch. II.

the conventional number continuum, inasmuch as the objects of reference of fractions with different denominators are different, so that in strict logic there is no conceivable sense in which $1/n$ and $1/(n+1)$ belong to the same system or continuum. Only when we think of the reference-object itself as capable of continuous variation in quantity, do we think of each possible increment as homogeneous or as 'belonging to' that same object; but what has this continuity and homogeneity to do with the number continuum? Plainly nothing more than this: The number system, being symbolic of quantities, represents numerically all quantitative differences in the represented matter; but this infinite elaboration of quantitative differences can be logically represented only by means of a single base which shall symbolize 'the minimum increment,' more usually termed an infinitesimal, in which case we find the pure quantity continuum symbolized by the system of integers alone. Fractions, in other words, do not serve to symbolize pure quantity in the least, but express relations between different systems of (possibly) pure quantity. Their function being, therefore, different from that of pure number, which symbolizes in the limiting case pure quantity, fractional numbers do not belong logically to the same system as do integers.

We now have to ask the question, in conclusion, which is of prime philosophical interest: What does continuity mean in pure arithmetic? And how does it relate to the continuity spoken of, say, in geometry or physics? Our above observations lead to the view that the integral system forms as true a continuum as possible in the realm of number. Letting n = an integer, we can say that, with any accepted object of reference symbolized by the base (= 1) of the system to which n belongs, there can be no number referring ultimately to that same kind of object which is not an integer. Cast into logical language, this means simply that, within any given universe of discourse, the same term must refer to the same object. To say, in arithmetic, that there are infinite numbers between 1 and 2, is to use the word 'number' in a flagrantly ambiguous sense, now for an expression of pure quantity, and now for a sign of relation between different systems of quantities. On the other hand, to say logically that

between 1 and 2 there are no numbers is to use the word 'number' univocally; 1 and 2 are continuous or 'adjacent,' if you will in the purely logical sense that there are no numbers of the same kind (pure numbers) which are greater than 1 and less than 2. In still more logical phraseology, we might express this by saying that, in any universe of discourse, it is impossible to have more than one object of reference and less than two. The meaning of this remark, though abbreviated, is probably plain enough.

Our conclusion, then, is that arithmetical continuity, even when correctly stated in its simplest logical form, throws no light upon the meaning of geometrical and physical continuities. And no description of a real continuum in terms of one-to-one correspondence with the real number system *explains* the character of continuity; such a description is only a formal *confession* of the presence of continuity. And the reason for this is that arithmetical continuity is really nothing but a peculiar instance of logical consistency of reference. It seems clear enough that spatial and temporal continuities are incapable of any such reduction to a merely logical demand. For all this, strictness in use of reference terms may well be advantageous in discussing these genuine continuities. Numerical description may be correct so far as it goes, but at best it gives us an aspect of continua which is not that of their continuity. We do not have to regard the numerical aspect as 'merely sujective'; it is simply other than the aspect of real continuity.

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SOLIPSISM: THE LOGICAL ISSUE OF RADICAL EMPIRICISM.

RADICAL empiricism is both a theory of knowledge and a theory of reality. As a theory of reality, its fundamental proposition is: Reality is experience and experience only. As a theory of knowledge, its cardinal proposition is: Reality is known by experience only and known because experienced.

I shall maintain in this article that solipsism is the logical issue of this doctrine. The proposition I shall try to establish is: The radical empiricist's experience is his own experience only. In other words, my proposition is: Radical empiricism contains no principles by means of which it is logically admissible to reach other reality than the individual's own experience.

In the prosecution of my undertaking, I shall first show that solipsism is the logical result of the radical empiricist's meaning of experience and its processes. I shall, in the second place, show that the same result follows from the radical empiricist's explanation of *perceptual experience* and of the knowledge of other minds. I shall, accordingly, first examine the radical empiricist's meaning of the terms, 'thought,' 'transcendence,' and 'cognition,' or 'cognitive experience.'

It is the doctrine of radical empiricism that the originals of all those relations which logical thought recognizes are given in experience, and are experienced along with the things they connect. Thought, as logic regards it, is later than experience and wholly derivative from experience. The function of thought is representative, substitutional, experience itself being the original source of truth and knowledge, which are always matters of concrete situations. Thought merely abstracts and generalizes from these concrete experiences; and the products of these processes are those convenient and very serviceable things called 'ideas,' 'concepts,' 'judgments,' and 'inferences.' These, however, are in their essential nature substitutes for actual experiences. Thought, in relation to concrete experience, discharges a function which is

analogous to that which paper currency discharges in relation to a gold reserve. The validity and the value of thought are determined solely by its possible reduction to the terms of experience, which is the cash value in gold of all these functions of thought. Such being the nature and function of thought, it is obvious that it lives and does its work only within the tissue of experience; and consequently it can never transcend experience in any valid exercise of it.

But radical empiricism recognizes transcendence; transcendence is a part of the very meaning of experience. Every experience is self-transcendent; it is the very *esse* of each passing experience to look before and after; to mean, to intend, to seek, to will a *next* experience, a move that is ever on the point of becoming actual as this present moment is actual. Now, my position is this: Accepting this transcendence on the part of each passing moment of experience, it does not carry us beyond the *individual's own* experience. The experience from which this transcending starts, its *terminus a quo*, is undeniably just this individual's own experience; as such, it has for its defining character, its *quale*, a 'this-mine' quality; and my contention is that the experience to which this transcendence proceeds, its *terminus ad quem*, has necessarily the same attending consciousness of being this my experience. When this experience becomes actual, it becomes actual as this same individual's own experience. Consequently, the radical empiricist's meaning of transcendence involves him in solipsism. There is nothing in transcendence which permits the recognition of other reality than the individual's own experience.

If we turn to cognitive experience with the hope of a happier lot, I fear that hope is doomed to disappointment. Truth and knowledge, according to radical empiricism, are relations of a particular sort between experiences, or parts of a single experience; and they are consequently experienced just as the things they unite. Truth and knowledge are in their original character experience processes. They are described as conjunctive transitions, taking place between two or more experiences. They are an affair of 'transition and arrival.' Now my position is that,

if this be the nature of the cognitive relation, it can exist only between experiences of the *same individual.*

In whatever terms this cognitive relation may be conceived — meaning and its completion, intention and its fulfillment, purpose and its realization, dissentience and its removal, want and its filling — of whatever sort this particular relation may be, it can hold only between experiences of the same individual. This is so because, according to this doctrine, the knower is just an experience; and this experience, of course, being an actual one, can only be the this-my-here-and-now-passing experience; and since the cognitive process is one of conjunctive transitions which lead into another experience, the experience into which these conjunctive transitions lead cannot be of another sort than the experience from which they set out. The knower never gets beyond himself; he is condemned to be a solipsist, will he, nill he. It does not matter by what names the radical empiricist may call the object known — the *terminus ad quem* of the cognitive process — whether 'fulfillment,' 'completion,' 'satisfaction,' 'ease,' 'peace,' 'harmony,' 'success,' etc., these terms can only describe or name this individual's own state of experience. We do not escape the merely subjective, the individualistic character of this experience by the mere use of terms that, in a different theory of knowledge, connote objective reality as something other than the knower's own experience. If we hold *consistently* the doctrine of radical empiricism, we must say that the knower's intention, purpose, want, etc., are fulfilled, attained, and satisfied in terms of experiences which are *all his own.* This knower never comes into possession of other reality than his own experience.

Thus is it shown, as I think, that solipsism is the logical issue of the radical empiricist's meaning of the terms, 'thought,' 'transcendence,' and 'cognition.'

I proceed next to the second part of my undertaking, which is to show that the same result follows from the radical empiricist's explanation of perceptual experience and of the knowledge of other minds. Taking first perceptual experience, I will examine the concrete case which Professor James employs.[1] There

[1] *Journal of Philosophy, Psychology, and Scientific Methods*, Vol. I, pp. 481 f.

are two points which are vital to his explanation of perception in this instance: one of these points concerns the distinction he makes between knower and known object; the other point concerns the possibility of a cognitive relation between these two experiences.

It is Professor James's doctrine that the same experience is both knower and known object, according as this self-same experience is taken; in one context or set of associates it is knower, while, taken in a different context or with different associates, it is known object. Thus, in this case of the room, the percipient or knower is an experience made up of experiences so linked as to form a personal history, while the room as experience has associates of a different sort, or that run in a different direction. The percipient experience in this instance is made up of a series of antecedent sensations, memories, feelings, purposes, etc., terminating in these present sensations, etc. The object-experience, the room and building, runs back through such a chain of associates as mean building, painting, furnishing, etc., and on to possible changes in this experience which is the present building and its contents. But if the experience called room or building, *qua* experience context or stuff, is identical with the experience which functions as knower, then the cognitive relation is merely between parts or moments of the same individual's experience; the percipient has no other objects than another experience of his own. If, on the contrary, this room is an experience of a different sort, is reality that is other than the experience which seeks to know it, then a cognitive relation between it and the percipient experience is impossible. For, since the cognitive process is one of experience, and this experiencing consists of conjunctive transitions, ever from a present experience to a next experience; and the present experience, being, as we have seen, always characterized by the consciousness of its being mine, the transition can never be into an experience that is other than mine. No such process can ever lead into an experience which is of a different sort than is the experience from which it proceeds. Once it is admitted that the room is other than the percipient's own experience, it is, as object, as truly separated from the knower as is

the supposed object of the realist from his knowing thought. The two experience series — percipient experience series and object-experience series — never run into each other.

What gives to Professor James's explanation the appearance of being successful and satisfying, is his use of a terminology which is strongly tinctured with meanings and implications that are really quite different from those meanings which radical empiricism can bear. For instance, Professor James's description of the room, the building, its antecedents, etc., is largely in terms that imply an already existing and objective order or context of actual experiences, into which this particular experience is fitted. Now, of course, an already existing objective order of experience is something quite different from a merely individual experience, and whoever recognizes such a reality is not a solipsist. But radical empiricism can recognize no such constitution of experience, for that were to recognize an objective determinant of experience, and an objective determinant of experience cannot be itself a percipient experience; it must be trans-experiential, and in the radical empiricist's world there is nothing trans-experiential.

Not more successful is the attempt of radical empiricism to explain the knowledge of other minds. The various individual minds in the pluralistic universe of Professor James are more hopelessly separated than are the monad beings in Leibniz's partially pluralistic universe. There can be something which will pass for inter action between the monads, because of a monistic basis on which the pluralism of Leibniz is made to rest. Pre-established harmony or some function of the Supreme Monad, God, secures something like intercommunication between the monads. But the pluralism of Professor James, being based upon his doctrine of knowledge, gives us only separate and incommunicative minds.

> "A God, a God their severance ruled!
> And bade betwixt their shores to be
> The unplumb'd, salt, estranging sea."

It is only the pluralistic thinker, who, by forgetting his empiricism, can know these many minds; no one of these minds can

know aught but that mind's own state. To be sure, Professor James has given a plausible solution of the problem of how minds can know each other, can know the same thing, etc.; but examination will show that this solution is ineffective. The use which Professor James attempts to make of the analogical inference to establish the knowledge of other minds is, for one who holds his doctrine, of no avail whatever; since this doctrine wholly removes the basis on which this inference must proceed, viz., the objective reality of the body of my social fellow. The other attempt which Professor James makes to reach the other minds is apparently more successful. The intercommunication of different minds is effected (such is the explanation) by the medium of an intervening reality of some sort, a thing which two or more minds are said to know, and to know because this object is a coterminous experience, the series of experiences which constitute each mind somehow terminating in this common object; and because this object is a coterminous experience, these different minds are intercommunicative. The cognitive car (if this figure can be allowed) runs along the track of the perceptual experiences of one mind, and, at this coterminal station it runs into the volitional-emotional-experience track, and thus arrives at the other mind without a possible derailment or failure to connect. Thus do simple conjunctive transitions lead from my mind into my neighbor's mind without a break anywhere; the transition sets out from my mind, and the arrival at my neighbor's mind is sure and without mystery.

But, unfortunately, this specious solution overlooks a fact which is of decisive moment; the *terminal* experiences of these would-be communicating minds are *different experiences.* We have different termini, but no *co*terminous experience. The perceptual experiences which are one mind, knowing, terminate in something which is not that in which the volitional and feeling-experiences of the other mind terminate. There is, consequently, no junction between these two minds, any more than there is between percipient experience and a thing which is not another mind. No conjunctive transitions can lead into the other mind; for the same reason, as we have shown, no conjunctive

transitions can lead into the sort of experience which means a thing or object in perceptual experience.

The conclusion from this second part of my undertaking confirms the conclusion reached from the examination of the meaning of the fundamental conceptions of radical empiricism. Solipsism seems to be the only logical issue of this doctrine.

I am, however, quite prepared to have the radical empiricist say, should he deem it worth while to notice this criticism, that I have fundamentally misapprehended his doctrine; that my argument proceeds from a narrowly intellectualistic point of view, one that presses a narrow interpretation upon the terminology in which his doctrine is set forth; and that the consequence is, I have missed the point all the way through. In particular, will he protest, I have narrowed his meaning of transcendence in a wholly unjustifiable way, and have quite misapprehended his meaning of cognitive experience.

Transcendence, he will say, is quite competent to reach experience that is other than the experience from which it proceeds. Distinct individualities or minds are no barrier to transcendence as radical empiricism conceives transcendence. There is, he will continue, no reason why experience cannot mean, refer to, intend, and seek something which is not just another moment or phase of the individual's own experience. The cognitive relation can join different minds, or minds and things, with no more difficulty than there is in linking the parts of the same individual's experience. Conjunctive transitions can run as easily into things and into other minds as they do into other experiences of the same mind. Why not? It is just these other minds and things, other sorts of experience which other minds and things really are, that are meant, intended, and demanded in cognitive experience; and, if there is in *actual* experience of the fulfillment of this intention, the satisfaction of this demand, why are not the other minds and things actually present in experience, in other words, actually experienced and therefore known? And if so, what becomes of my solipsism as the logical issue of the doctrine of radical empiricism? Should, however, the radical empiricist make such a

reply to my criticism of his doctrine, I think it will not be a difficult task to make good my contention, that he can really save himself from solipsism, only by abandoning his doctrine of knowledge.

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THE RELATION OF SCIENCE TO CONCRETE EXPERIENCE.

TO what degree, if at all, do the sciences bring before us reality in its concreteness? is a question which has of late years been discussed in many ways. The answers are various, according to the peculiarities of the schools from which they come. One replies that the scientific account of things is partial and abstract; another, that science is a tool, and its results are true only in an economic sense; still another, that scientific reasoning is confessedly mediate, while we get at reality only in immediate experience. All, however, seem to agree that the sciences, and especially the natural sciences, are abstract, and even artificial, and the epistemologists are the more unanimous in this opinion because the scientists themselves — at least those who raise the question — also hold it, if one excepts such adherents of Newtonian realism as Lord Kelvin and Sir Arthur Rücker.[1]

This apparent unanimity is seen on examination, however, not to exclude very considerable differences in meaning. Such commonly-accepted positions have often appeared in the past development of philosophy. But they always prove nodes of intersection, rather than common conclusions. The various lines of thought unite in them only to immediately diverge, each on its own path, some to successfully urge their way to a higher level, and others to end, as it were, in a blind alley. It is as such a fresh point of departure that the 'unreality' of science seems to appear at present. All recognize it; but its meaning varies with the perspective of the various schools and teachers.

One division among those who profess this opinion may be stated at once. It does not necessarily follow — though this seems sometimes to be overlooked — that, if we hold science to be abstract and unreal, we must necessarily contrast this abstract-

[1] *Cf.* the address of the latter, cited in Ward, *Naturalism and Agnosticism*, 2d ed., Vol. I, pp. 305 ff.

ness and unreality with the reality of an *immediate* experience, a *reine Erfahrung*. We may describe reality in other terms than this, and still hold that the constructions of science are in some sort unreal. The contrast of the complete with the incomplete experience is equally available. Nevertheless, in many cases these portions are connected, and appear, explicitly or implicitly, as interdependent.

Speaking generally, there would seem to be four typical schools of thought under which we may range those who hold that the descriptions of science are not descriptions of reality as it is. I am speaking, of course, of professed epistemologists and metaphysicians, not of those scientists who criticise the methods of their own science. These schools are voluntarism, the foremost representative of which at present is probably Professor Münsterberg; pragmatism, represented by Professors James and Dewey; positivistic sensationalism, as set forth by Ernst Mach and Karl Pearson; and absolute idealism, in its various shades of emphasis and meaning, as we find it held in common by such differing thinkers as, for instance, James Ward and Edward Caird.

It should be noted, however, that the adherents of idealism may vary greatly in the extent to which they hold that science is abstract and unreal. In the first place, they may regard different sciences as more or less abstract. This, however, is largely a question of detail. The more important difference concerns the meaning of this abstractness itself.

What may perhaps be called the orthodox party in this matter follows the example of Hegel in his discussion of the various categories. In the *Logic*, each category is seen as an imperfect statement of reality from the point of view of the one next beyond it in the advance towards the self-conscious idea. But that does not mean that it no longer has any reference to reality, or is abolished. Upon its proper level, it retains its validity. Were this not so, the next higher category would have no real content, since it appears as the completer realization of the lower. Accordingly, to cite the well-known example, when we pass from the standpoint of science to that of philosophy, from essence to

the notion, freedom appears as 'the truth' of necessity, and yet as presupposing necessity. Again, when he discusses the necessary transition from mechanism to 'chemism,' and from 'chemism' to teleology, Hegel expressly states that the import of mechanism is universal, and not to be confined to the physical realm. In a word, to use the current formula, the contrast between the categories is one of 'degrees of reality,' of the more with the less complete, or adequate, statement. And it is in precisely the same spirit that the party of idealists to which I have referred would lay stress on the incomplete nature of scientific description, and yet hold that a correction of this is possible without destroying the first data. But there is now opposed to them a growing school which would refuse to admit that the scientific account of things is 'true as far as it goes,' and would insist that its inadequacy is not merely due to incompleteness or one-sidedness, but to a systematic intention to deal with reality only in a very indirect and artificial way, and for a very special purpose.

But, in spite of the large range of possible and actual variance in this matter, most idealists are united in rejecting any contrast of scientific thought with an immediate experience of any kind. This separates them clearly from voluntarists, pragmatists, and sensationalists alike. In so far, therefore, as the common position that the sciences do not give us reality in its concrete fulness is admitted, a criticism of the contrast with 'immediate experience' would seem to be an indirect apology for the more usual idealistic view.

In the case of the voluntarism of Professor Münsterberg, we have an elaborate exposition of a theory of immediate experience for which knowledge is a means to an end. This theory is quite familiar, and it will be sufficient to recall that according to it the immediately real world is one of volition. In it subjects and objects do not exist; they are valid, the subjects as wills and as attitudes, the objects as ends and means. The existential world is a product of the real wills, devised for the realization of certain of their purposes. Truth is thus a secondary product of

reality, and knowledge is true, according as it meets the special purposes for which it is constructed.[1]

If, however, knowledge is such a special creation, the question arises: How are its results available for the real life in the service of which it is produced? Knowledge and the results of knowledge are unreal and abstract. Yet knowledge arises within concretely real experience, as a function of that experience. The results of its analysis must then in some way enlarge that experience, and guide its activities. Yet the objects of this analysis are unreal. How, then, can its results become part of the immediate reality?

There seem to be only two brief passages in which Professor Münsterberg deals directly with this difficulty. They occur in the *Grundzüge der Psychologie.*

In the first we are warned that we must not think that analysis adds anything to our knowledge of that immediately given reality — abstracted, of course, from its context — with which it begins. What it really does is to *create new realities.* This statement must mean, according to Professor Münsterberg's use of the term *reality*, that such products of analysis become objects — ends and means, that is, — in immediate experience.[2]

The second passage begins with the statement that the analysis and abstraction necessary in science do not destroy the unity of experience itself. It then continues as follows: "The fact that a certain chemical produces certain effects upon the organism may be discoverable only by scientific research, and remain unknown to most men. As soon as I know it, however, the expected effect is an object which unites itself with the perceived object, so that my action deals with both as one. . . . The original unity of experience is not shattered, therefore, when the conceptual analyses of the objective sciences begin. This [process] is only a deepening and enriching of experience. . . . Our concepts and judgments are unitary factors of experience, which are inseparable from the perceptions of immediate experience and surround

[1] *Cf. Grundzüge d. Psych.*, pp. 23 ff., 45 ff. *Psychology and Life*, pp. 23, 31, 97 ff., 198–199, etc.

[2] *Grundzüge*, pp. 57–58.

them with a halo of interpretations and expectations, with logical overtones only to be perceived in isolation by the use of concept-resonators. The reality thought in concept is no longer pure experience; but the reality of the educated man, filled with such concepts, is just as much pure experience as the conceptless existence of the unlettered."[1]

The meaning of these passages appears to be this: The objects of science are, it is true, unreal and abstract, secondary. But its judgments and its concepts are parts of immediate reality. A judgment, so Professor Münsterberg frequently insists, is really a will-attitude. However unreal the world of science is, therefore, the *conclusions* of the scientists are always included in immediate volitional experience. They neither augment nor diminish the reality of the originally given; for all we can say of the immediately real is, that it is so, and not otherwise. To admit the possibility of its modification by reinterpretation would be to deny its immediate reality. But what these conclusions do is to *amplify* immediate experience, to "deepen and enrich" it. We have more of it. The original objects, in themselves the same, are now surrounded by "conceptual halos," "logical overtones." And as this amplification is at the same time a change in our "expectations," it will involve a corresponding change in volitional attitude towards the objects.

In thus refusing to admit that there is any room for reinterpretation or for increasing organization in an *immediate* experience properly so-called, Professor Münsterberg shows a just sense of the implications of such a theory. His insistence on the primacy and immediacy of volition enables him the more readily to evade such an admission. Nevertheless, the evasion seems to be largely verbal. As far as results go, there would seem to be no difference between his 'amplified' experience, and the reinterpreted or more closely organized experience of the idealistic logician. The modification, whether of volition or judgment, which has taken place, cannot be described in terms of merely more or less.

Professor Münsterberg prefers to regard the judgment as a volitional attitude. From one point of view, it is rightly so

[1] *Op. cit.*, pp. 64–65.

regarded. But it is also something more. A judgment not merely states an attitude towards, or a demand upon, reality. It also describes, more or less explicitly, the structure of reality, in reference to which only the attitude or the demand has any meaning. No dividing line can be drawn in actual experience between cognition and volition ; the two are always interpenetrating and modifying each other. More accurately, the process of experience is cognitive and volitional alike. That growing purification from the merely personal, particular, and empirical which development involves on the side of knowledge, is equally present on that of will. Our purposes as well as our ideas clear up and steady as rational life advances, and, precisely because the process is essentially the same, the law of progress is the same on both sides. It is always an advance from a relatively incoherent and unorganized state, whether of volitions or of knowledge, towards a relatively coherent system. Both sides of our life are equally involved in this change, and there is no more immediacy to be found in the one than in the other.

Let us enlarge on this a little by returning to the text which has just been cited. From the point of view of the idealistic logician, our judgments about reality, at first comparatively separate and independent, become as our knowledge advances more and more systematized and interwoven, so that they approach an ideal limit at which the logical nexus is complete. The voluntarist prefers to use terms of purpose and will. Let us for the moment concede this to him. But is it not equally true, when we examine the matter, that the change in volitional attitudes that accompanies the 'amplification' of immediate experience which Professor Münsterberg describes, is in the direction of an increasingly systematic organization of our volitions? At first they stand side by side, comparatively unrelated. But the changes which take place as experience enlarges involve increasing correlation and adjustment. To take an example suggested by his own of the chemical element: In a relatively non-scientific stage of experience, I might desire to eat all things indiscriminately which were pleasant to the taste. At the same time, I would have a desire for life much stronger than that for pleasant tastes, though

normally it would not be prominent in consciousness. Enlarged experience might teach me the conflict of these two desires. The result, then, of its increasing range, and of the accompanying changes in volition, would be a closer organization of these two volitions. The desire for pleasant tastes would be brought into conscious subordination to the desire for life, and whatever in it conflicted with the more inclusive desire would be eradicated. Similar examples might be multiplied. They are most striking, of course, in the history of the adjustment of the 'selfish' to the 'altruistic' desires in the social life of mankind. As experience develops, the primitive volitions do not remain the same, any more than do the primitive judgments. What takes place is not a mere addition to them of other volitions, equally 'immediate,' but a profound modification of both new and old. And this modification is a constant process of mediation and organization. Nowhere in it can we find any absolute immediacy, or any contrast in this respect with cognition. Indeed, the growing organization which I have described is really the same on both sides, and usually we can express it at our option in terms of either.

The voluntarists can hardly look for an abler expositor than Professor Münsterberg. Since his argument fails at this most important point, it seems fair to assert that the notion of an *immediate* experience is equally untenable, whether one prefers the intellectualistic or the voluntaristic emphasis. Its adherents are equally unable, in either case, to state what they mean by it without really abandoning the notion. It is true enough that experience has at all times an immediate aspect; but this immediacy is merely relative. Experience is a process, one throughout, no portion of which can be contrasted as absolutely immediate or concrete with another as mediate or indirect. What we really find is a difference in degree of concreteness or organization, and the later stage is always the product of mediation. Therefore we can say that immediacy in any valuable sense is always the result of preceding mediation. If the ethical ideals and volitions of the civilized man differ from those of the savage, both in adequacy and clearness, this difference is the result of a long history of the adjustment and organization of competing impulses

and desires. But those ideals may be said to be more 'immediate' than those of the savage, inasmuch as they are far more definite and individual. Again, the sense-experience from which the scientific experimenter takes his data is certainly quite as 'immediate' to him as that of the untrained observer is to him. But it is more valuable for his purposes, because it has been more completely organized; which is what we mean when we say that he chooses the 'significant' facts, and brings them to bear on one another. Both in volition and cognition, then, immediacy is a purely relative thing, and the more mediation underlies it the more useful it is.

Now this criticism seems to apply to the pragmatist as well, provided he would carry through his teaching to a consistent conclusion. He also, like the voluntarist, holds to an immediate experience, in the course of which thought appears when it is needed to solve a problem, or when it is useful. "Thinking," he tells us, "is adaptation to an end through the adjustment of particular objective contents."[1]

How are we to understand such statements as these? The question at once arises: What is it that sets this end? Is it, on the whole, one which is determined by the nature of the thought-process itself, and internal to it? Can we assume that this is what is meant when the problem is stated as "the restoration of a deliberately integrated experience from the inherent conflict into which it has fallen"?[2] If this were the meaning of the pragmatist, the statement would be quite true, but not very new, save for the terms employed. Every step in the dialectic of Hegel's *Logik* might be defined as the exposition of such an "inherent conflict" and of the "deliberate integration" which it necessitates. That thought is a purposive activity, striving toward the realization of an end immanent in itself, and nowhere finding anything entirely foreign to itself in this striving, is the historical teaching of idealism. In so far, therefore, as the pragmatist insists from this point of view upon the functional unity of experience, the idealist sees in him an ally rather than an oppo-

[1] Dewey, *Studies in Logical Theory*, p. 81.
[2] *Ibid.*, p. 47.

nent, as has recently been emphasized in the pages of this Review by Professor Creighton.[1]

But, on the other hand, in so far as the end or purpse of thought is taken by the pragmatist to be external to thought, and presented to it as a datum from an immediate experience of some kind, there would seem to be only two courses open to him. If he chooses to remain an epistemologist, he must describe this immediate experience which sets the ends for thought. Sense, feeling, will are the terms at his command for this description; but of these he must make especial use of the last, since he has to account for purposes and ends. In a word, pragmatism, in completing itself as an epistemology, must pass over into voluntarism.[2] In so doing, it is equally open to criticism; the unity of will and thought must be admitted — I have already dwelt upon it — but that "it all comes to immediate experience,"[3] in any sense of immediate other than that already conceded, cannot be granted. Will and thought are equally immediate; but they are also equally mediate. If will sets ends for thought, it is also equally true that thought sets ends for will. In neither case does this 'end-setting' come from without, since both are aspects of the same process. The argument need not be repeated. It is enough to say that to the present writer the theory of the pragmatist seems to break down at the same point as that of the voluntarist, that is, at the transition from the supposed immediate experience to the 'dependent' and 'secondary' process of thought.

Unfortunately, there seems also to be a tendency either to ignore this problem of immediate experience altogether, or else to evade it by appealing to biology. In the latter case, the ends of thought are described as set for it by the nature of the 'struggle for life,' and reason is regarded as a tool which has 'survival value.' It is unnecessary to point out that such a theory really throws epistemology aside, and takes refuge in an uncrit-

[1] Vol. XV, p. 483.

[2] Professor James illustrates this; but I would refer especially in this connection to the recent address of Professor Dewey, "Beliefs and Realities." See this Review, Vol. XV, pp. 113 ff., esp. p. 124.

[3] *Loc. cit.*

ical realism. As metaphysics, biological pragmatism is no more respectable than any other form of naturalism.

No detailed criticism of the sensationalism of Mach and Pearson can be given here. The reputation of both is based upon achievements in other fields than that of epistemology, and it is quite safe to assume that this point of view is not seriously held by philosophical scholars at present. As an epistemological theory, it is thoroughly uncritical, and begs questions on all sides. Pearson explains both the particular perception, and the adaptation of conception to perception, by natural selection.[1] Both Pearson and Mach either take the organization always found in the data of knowledge, at however early a stage, for granted, or else explain it by a crude associationism,[2] the laws of which are again determined by survival value. In neither case, of course, are we given any adequate account of the immediate experience for the service of which thought is supposed to exist.

We return, accordingly, to idealism. I said in beginning that a rejection of the three theories involving some form of immediate experience would be after a fashion an indirect proof of the more usual idealistic theory, as that was the only important school of epistemology not holding such a view of experience which maintained the abstractness of science — and this abstractness we took as an admitted truth. But it should be noted also, that the acceptance of idealism sets a limit to the degree to which we can assert this abstractness. Scientific thought is for the idealist a part of the thought-experience as a whole, within which there are wide differences of concreteness, but no contrast of the merely abstract with the fully concrete. Nevertheless, as has already been noticed, very wide differences of opinion are possible among idealists as to the extent to which the results of science are available for the use of a constructive metaphysics. It may be well, in conclusion, to contrast briefly the radical view in this matter with the conservative. The radical would urge, as we have seen, that science is admittedly better science, the more abstract it becomes. It does not pretend, when it knows its own

[1] *Grammar of Science*, 2d ed., pp. 102 ff.

[2] *Cf.* Mach, *Analysis of the Sensations*, Engl. transl., pp. 20–21, etc., and Pearson, *op. cit.*, pp. 40, etc.

business, to describe reality as it is, but aims rather at a conceptual summary which is an artificial means devised for very special purposes of control within a carefully limited field. It may well be, therefore, that only the knowledge of the general methods and norms of thought gained in the work of the several sciences can be used in our final account of reality, while their special objective results must be rejected, as of no validity, except for the particular purposes of the science which states them.

Now there are many things to be said in favor of such a view. It is true, in the first place, that every science is a special construction. It commences by isolating a certain group of phenomena as its subject-matter. Thus physics deals with the phenomena of motion, and psychology may explicitly put on one side the problem of mind to deal with mental processes as phenomena. In considering such isolated phenomena, science assumes certain definitions as its necessary points of departure; and, as in the case of theoretical mechanics, these definitions are often highly artificial and not based on any definite actual experience. Once at work, it often employs hypotheses and conceptions which are admittedly of only methodological and instrumental validity, useful to organize and control its data for the time being. Such, for instance, is the more usual view taken by psychologists of the parallelistic hypothesis, or by physicists of the conception of a primordial ether. As a result of all these restrictions, the results of science are valid only 'under the rules of the game'; that is to say, as in the case of geometry, only when the particular conventions essential to its method and subject-matter are presupposed. And this view of the question seems to be borne out by the history of the sciences. The more sophisticated and aware of their proper task they become, the more they divorce themselves from metaphysics, and give up any claim to get beyond the phenomenal. So that at present many among scientists themselves regard their science as 'merely descriptive,' as having only economic validity in summing up observed phenomenal sequences.

But this view of the sciences has other reasons for its preva-

lence than the strictly logical and historical. It is attractive to many because it seems to offer a royal road, so to say, to the metaphysician. It would seem to absolve him from finding a place for mechanism in his final account of the universe. He is not obliged to make causal determination universal, and then laboriously arrive at a freedom for which this mechanism is but a universal means of expression and realization. Thus he can avoid the difficulties which many feel in accepting such strict Neo-Hegelian views as, for example, those of Edward Caird. That such a view is oppressive to many minds is certain; Professor James, for example, has voiced his discontent at a freedom which is everywhere and nowhere. Undoubtedly this consideration has been one of the sources of the popularity of the radical view, particularly as set forth by the adherents of voluntarism.

Nevertheless, there are some weighty arguments for the conservative view, which I can here only briefly touch upon. We must admit, in the first place, that science does claim to be in some sense an adequate description of the facts. However much a construction it may be, it is not an *arbitrary* construction. In so far, therefore, as it is based on the laws of experience in general, its results must be considered in any attempt to give a final account of that experience and its meaning. Of so much we may be sure, though this does not exclude a very radical transformation of those results in that final account. It is but stating this in another form to urge that, however hypothetical the judgments of science may be, they necessarily have a categorical basis of some kind. More concretely, science is true, even as construction, because it constructs *within* a reality of given, definite nature. It solves its problems because the conditions are definite, and it meets them. Every valid solution is, therefore, implicitly a statement of the nature of those conditions, and, as such, material for the metaphysician.

It must also be urged that no absolute separation between scientific and other experience is possible. The sense of reality is the same in both, however it may vary in degree, and there is a constant interplay between our scientific knowledge and our attitude towards reality in general. The one is profoundly affected by the

other. The classic instance of this is the effect of the transition from the Ptolemaic to the Copernican astronomy ; but it is sufficiently apparent in less striking cases. We do not carry our scientific judgments about with us quite separately from our attitude towards 'concrete reality' or 'living experience.' Science and the rest of life do not merely coexist, but make one whole of experience. The passages from Professor Münsterberg which I have just been discussing admit this interplay fully, and all of the criticism thus far advanced is an argument for it. But if the results of science have this vital significance in our experience, they cannot be excluded from the data of the metaphysician.

It seems, then, that Hegel has set forth the most profitable way of approaching this problem. The sciences are not superseded or rejected by metaphysics. On their own level, they retain their relative truth as accounts of reality. As steps in the movement of thought — concrete thought, which is both knowledge and will — towards its goal, they find the correction of their abstractness and incompleteness in that more adequate standpoint which it is the duty of philosophy to at least attempt to describe. In so far, therefore, as the advance of the belief that the sciences are abstract, among both scientists and epistemologists, means a clearer perception of their tasks on both sides, it is a welcome sign of the times. But if the attempt is made to open the way for metaphysics to entirely disregard the results of science, it can only end in the impoverishment of the former. We have a curious paradox, if 'humanism' seeks to exclude from the data of the philosopher a large part of the historically human in experience, and to make a gap between science and morals, between life and knowledge.

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DISCUSSION.

OBJECTIVE IDEALISM AND REVISED EMPIRICISM.

THERE appeared in this REVIEW for September a very able and suggestive article from Professor Dewey, on "Experience and Objective Idealism." I propose to discuss three points in this article: (1) Professor Dewey's criticism of objective idealism; (2) the revised empiricism which Professor Dewey puts in place of this idealism; (3) the significance of this revised empiricism for one's *Weltanschauung*, particularly for one's ethical and religious ideals and faiths.

To begin with Professor Dewey's criticism of objective idealism. It is in substance the following: Objective idealism is involved in contradictions in its explanation of experience. "Idealism is condemned to move back and forth between two inconsistent interpretations of this *a priori* thought. It is taken to mean both the organized, the regulated, the informed, established character of experience, an order immanent and constitutional; and that which organizes, regulates, forms, synthesizes, a power transcendent and noumenal." "The first sense, if validated, would leave us at most an empirical fact, whose importance would make it none the less empirical. The second sense, by itself, would be so thoroughly transcendental, that while it would exalt 'thought' in theory, it would deprive the categories of that constitutional position *within* experience, which is the exact point of Kant's supposed answer to Hume."[1]

Objective idealism, therefore, gives no explanation of experience. It is unable to do so, because, in one of its meanings of *a priori* thought, that thought reduces to an empirical function; while the other meaning of the *a priori* makes thought incapable of coming into any intelligible relation to experience. In particular does Kant's doctrine fall into a fatal fallacy, because of the contradictory meanings of *a priori* in his epistemology. This *a priori* worth of thought is taken in the sense of regulation, direction, controlling, *i. e.*, of consciously and intentionally making experience different; and this *a priori* is again taken as something which is already immanent in any experience, and, accordingly, it makes no determinate difference to *this* experience as discriminated from that.[2] But not only is ideal-

[1] Pp. 469 f.
[2] P. 470.

ism self-contradictory in its meaning of *a priori* thought; it is contradicted by the character of our experience. Error, inefficiency, and the need of revision and correction characterize our experience; and the practical work of revising and correcting experience is not done by the idealist's *a priori* thought. "As a special favor, will not the objective idealist show how, in some one single instance, his immanent 'reason' makes any difference as respects the detection and elimination of error, or gives even the slightest assistance in discovering and validating the truly worthful."[1] Were objective idealism true, the character of our experience as needing correction and revision would be inexplicable.

But objective idealism is untenable for another reason. It affords no explanation of ideality; nay, it is even incompatible with the true meaning and serviceableness of human ideals. "Spirituality, ideality, meaning as purpose, would be the last things to present themselves if objective idealism were true. Values cannot be both ideal and given."[2] Ideality as the good, the beautiful, not only does not need the presence of some immanent reason; these are even incompatible with this transcendental origin.

I shall now examine this criticism of objective idealism; and first, the alleged contradictory meanings of *a priori* thought. I confess I cannot find any such contradictions as Professor Dewey lays to the charge of idealism. Between experience as simply possessing an immanent, constitutional order, and that *a priori* thought which is supposed to effect this constitution of experience, I can see no contradiction whatever. Idealism teaches that this constitution of experience, its order, the systematic connection of its parts, etc., is explicable only if there be some principle of connection and order which is other than merely empirical content, but which, working within experience, moulds and determines these structural features which experience presents. I am also quite unable to find that "fatal fallacy," from which Professor Dewey says "Kant never emerges." I do not think Kant ever got into such a fallacy. I do not think Kant's doctrine vibrates between two discrepant meanings or uses of *a priori* thought. It seems to me that his point of view when he is speaking of the revolution which the *Critique* has effected in philosophy, and his point of view when he is meeting Hume's sceptical solution of the problem of causal connection, are the same. Kant met Hume's doctrine of causation by showing that the experience from which Hume professed to derive

[1] P. 474.
[2] P. 480.

the idea of causal connection, is itself possible, intelligible, only if the causal principle is presupposed.

Now this same meeting of the *a priori* underlies what Kant says about the revolution which he had effected in philosophy, or rather in epistemology. This profound change consisted, as the student of the Critical Philosophy knows, in reversing what had been regarded to be the relation of mind and object in knowledge. So long as determination was on the side of the object, and dependence on the side of the mind, the solution of the problem of knowledge was impossible. But if mind determines by its own nature the condition under which there can be objects *for* mind, then the question, How is knowledge of matters of fact possible? can be answered. Kant, as every student of philosophy knows, formulated the problem of scientific knowledge in the question: How are objects of experience possible? And his answer to this question consisted in showing, that such objects can exist for us, only if there are *a priori* conditions of possible experience within which all objects exist. I do not think Kant ever departs from this meaning of the *a priori* nature of thought. Kant's *a priori* principles present two aspects, according as we look at them at work in the making of knowledge, in weaving the web of objective experience, and again as logically prior conditions of possible experience. It is the oversight of this distinction that leads Professor Dewey to say that Kant has two contradictory meanings of *a priori* thought. Thus, in the case of the triangle, Professor Dewey says: "The concept of a triangle taken geometrically . . . means a determinate method for construing space elements; but it also means something which exists in the mind *prior* to all such geometrical constructions and unconsciously lays down the law not only for their conscious elaboration, but also for any space perception."[1] Professor Dewey finds the first meaning intelligible and accepts it, but finds in it only a "contribution to a revised empiricism." The second meaning is to him, however, a "dark saying." Now, Kant would say that this determinate method of construing space elements is an instance of the actual working of the *a priori* principles, the actual creation of an object of experience; while if, in abstraction from this actual functioning, we look at the *a priori* as a constituent factor in a possible knowledge, we shall say that this factor is prior (logically not temporally) to the existence of this triangle as an object of experience, or as purely geometrical object. It is this logical constitution, not the psychological origin of knowledge, that Kant has in mind. To say with Kant that something is in the

[1] Pp. 470 *f.*

mind prior to the existence of a known object, is not, it seems to me, to utter "a dark saying." My conclusion upon this point in Professor Dewey's criticism is, that he has not made out a contradiction in the meanings of *a priori* thought on the part of the objective idealist.

But the idealist's *a priori* thought, if it is not virtually identical with empirical thought, must, because transcendental, be incapable of coming into any intelligible relation to experience; it can consequently have nothing to do with our actual knowledge. This is Professor Dewey's charge against objective idealism. But this criticism misses the mark, it seems to me, by pressing upon idealism extreme alternatives. Thought need not be transcendental in the sense Professor Dewey takes it, in order to be *a priori* in relation to experience. Because thought is other than a merely empirical process or content, it does not follow that it cannot come into relation with experience-data so as to be one of the two factors in the constitution of knowledge or objective experience. Thought and experience data can be distinguishable — nay, be different in their *esse* — without being separable in actuality. Nor *need* thought be superhuman; indeed, Kant's *a priori* thought is human *only*. Kant's *a priori* principles and his categories are not transcendental things in the sense which Professor Dewey's criticism contemplates; they are supra-empirical, but only in this meaning, that they are other than, and not derived from, sensation or sense-presentation experience. That there is a supra-empirical consciousness or functioning in this meaning of the term, is by no means an impossible supposition. Nor is there a serious difficulty in holding that these supra-empirical functions should so deal with the sensation or presentative data of experience, as to make experience objective in the Kantian meaning of experience, viz., the sum total of objects and their relations.

Professor Dewey's second objection to objective idealism is a more serious one; and it seems to put the idealist in a difficult position. If error abounds in our experience, and there is much in its constitution that demands correction and revision (this must be admitted), and if it is not *a priori* thought which, in a single instance, corrects error, or revises the inadequate, or remedies the inefficient; if, in short, the idealist's theory of *a priori* thought contradicts the actual character of our experience, his theory would seem to break down completely. The only reply which the idealist can make to this objection is the following: Were it the case that our *entire* experience stands in need of correction and revis on, that fact would not disprove the existence of *a priori* thought. *A priori* thought is not bound to be infallible,

nor to do work that needs no correction or revision. The fact that something is *a priori* is no guarantee of its inerrancy or its supreme worth. But it is *not* the fact that our experience is through and through in need of correction and revision; that there are no features of it that need not be altered; on the contrary, there are, in the constitution of our experience, certain constructive and determining lines which need not, and will not suffer correction or change, unless experience is to become a chaos of *disjecta membra*. Our experience is to some extent unorganized: the necessary and the contingent, the unchanging and the ever changing, the static and the flux, error and truth, finite processes and infinite things as ideals, partial and fragmentary actuality, and the absolute, the completing whole, as an ideally conceived thing; the partly good, good in the making, the absolutely good, good as final achievement in our idealizing thought — such is the world of experience. Now it is the doctrine of idealism that *a priori* thought supplies those elements in the constitution of our experience that need not and suffer not correction or revision; and likewise this thought is the source of those ideas, those postulates, and those appreciations in virtue of which any complete and satisfying revision of our experience is possible.

But idealism is incompatible with ideality in our human world. This is Professor Dewey's third objection. "Values cannot be both ideal and given." And if idealism is true, these values *must* be given things; they are already achieved, they exist in a Platonic world, and consequently they are not our human creations, living and warm with the life and passion of human struggle and achievement. The ideal good, like the ideal true, can have meanings and relevancy, only if it be *our* ideal and *our* valuation. But may not *both* be true, viz., the absolutely good and beautiful and true, existing as a life, as Absolute Experience, and ideality in us as purpose, and depending upon our endeavors for the measure of actualization it attains in our finite experience? Why may not the ideal significance of our lives and our human valuations be our own, and at the same time be the temporal embodiment of the Eternal and All-Good, "in whom we live and move and have our being"?

Why should ideality and values cease to be ours, because we recognize in them a greater purpose than we can realize in our fragmentary and ever changing experience? Why should anything lose its value, because, in achieving and valuing it, His hidden meaning lies in our endeavors, and our value judgment is the response to an absolute worth? What we call "Divine purposes," if there are such things,

need not be "automatically injected" into our human world in order to be with us; nor need they "ride in a cosmic automobile to predestined ends." Why cannot our own purposes ride in the same "cosmic automobile," and be inseparable from the purposes that include and complete them? Professor Dewey will find it a hard task to maintain against objective idealism his proposition: "Spirituality, ideality, meaning as purpose, would be the last things to present themselves if objective idealism were true."

I come next to Professor Dewey's revised empiricism. I am not quite sure that I rightly understand this part of his article; but if I do understand his doctrine, it logically leads, either back to the older empirical explanation of knowledge, or forward to an idealistic epistemology not materially different from that of Kant, according as one interprets the terms in which this new doctrine is set forth.

If that which Professor Dewey calls "reflective thought" is anything more than Hume's associative memory; if its function consists in anything else than "harking back to former experience," I fail to see how it can be materially different from *a priori* thought. If "empirical thought" means anything more than just experience processes, biological activities; if it is something which newly directs, changes, revises, and reshapes experience, — why does not this thought perform essentially the same function which the *a priori* thought of the idealist performs? To call thought a "biological activity," a "vital activity," etc., describes well enough the practical value and service of thought for life; but that does not tell us what thought *is* or how it is able to possess this value for the ends of life. I confess it is not easy for me to recognize the truth of Kant's geometric concept in the definition which makes it "the practical locomotor function of arranging stimuli in reference to the maintenance of life activities *brought into consciousness*, and then serving as a center of reorganization of such activities to freer, more varied flexible and valuable forms."[1] Professor Dewey would hardly maintain that the mere existence of these stimuli, so arranged as to maintain life activities, is any explanation of the knowledge of this fact; nor is the problem of knowledge, in respect to this fact, solved by saying that a practical locomotor function of this description is somehow brought into consciousness, etc.; the essential problem is only propounded, not solved, by such a definition as the one just quoted.

Again, when a concept is defined as "the practical activity doing consciously and artfully what it has aforetime done blindly and aimlessly"[2] and thereby doing it better, etc. we are impelled to

[1] P. 472. [2] *Ibid.*

ask: What does this consciousness add to what was done aforetime unconsciously and aimlessly? How does consciousness change or better the situation? Would not Hume's associative memory do all that Professor Dewey seems to make consciousness do? If *not*, what different function of thought is it which makes this change in experience? Once more, when thought as "a reorganization of biological functions" is said to do "naturally what Kantian forms and schematizations do supernaturally," we ask: What is the relation of thought to the biological functions, and how does it effect their reorganization? I think the answer to this epistemological question must be found either along the line of the older empiricism, or in the direction of that idealism which Professor Dewey rejects. To conclude my discussion of this second point, I do not think Professor Dewey can hold a *via media* between Humian empiricism and Kantian idealism as solutions of the problem of knowledge.

I pass to the third point of this discussion: the significance of Professor Dewey's revised empiricism for one's *Weltanschauung*. It is Professor Dewey's doctrine that all ideals and values are created and sustained by our human activities; and, consequently, that they have significance and relevancy only in our experience.

Now, it seems to me that the consequence which follows from this meaning of ideality and value judgments is, that the world of our human experience is the only universe we can legitimately acknowledge; certainly the only reality to which we can sustain intelligible relations. The Infinite, the Eternal, the Absolute, the All-good — *these* are names empty of all real meaning, idle fancies for minds that will dream or idly speculate instead of seeking to know and to make better the only real world there is, the world of experience. This world permits no reference to a superhuman reality. We are thus left with reality that is fragmentary only, with experience that is made up of flying, ever changing moments, with thought that never wins final truth, with temporal processes, and no eternal to justify and give them meaning; with finite progress and no goal finally won; with a better and no best as the ultimate standard of value judgments. For the satisfaction of ethical and religious ideals and aspirations, we must look to our possibly better selves. Our idealized selves are our gods; and the cry after the Divine, the Eternal, the Complete in knowledge and in goodness, must be satisfied with that fragment of truth and goodness which is all that our finite lives can possess in their best estate. Such, I am compelled to conclude, is the metaphysical import of this new empiricism.

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REVIEWS OF BOOKS.

Science and Hypothesis. By H. POINCARÉ. Translated by G. B. HALSTED, with an introduction by JOSIAH ROYCE. New York, The Science Press, 1905. — pp. xxxi, 196.

In an essay of this kind, attempting to bridge the gap between two realms of thought, one source of weakness is almost inevitable — the difficulty of acquiring independent competence in widely divergent lines of research. In this respect M. Poincaré is most fortunate, being (as Professor Royce says) "as geometer, as analyst, and as a theoretical physicist, a leader of his age," and "a great special investigator who is also a philosopher." Certain defects in his equipment are, however, quite prominent. In the first place, he lacks psychological training. I do not mean that he is ignorant of the elementary facts of psychology; for that is not the case. But of what psychological investigation means — how its results are established, in what their accuracy consists — he appears to have very little inkling. Thus we find him speaking (in connection with mathematical induction) of "the power of the mind, which knows itself capable of conceiving the indefinite repetition of the same act when once this act is possible. *The mind has a direct intuition of this power*" (p. 13; italics mine). What species of hypothesis is this?

In the second place, M. Poincaré is handicapped by the lack of a general logical theory upon which to base his special logical investigations. Thus, for example, he has no general theory of induction: "I shall not have the presumption to discuss this question after so many philosophers have vainly striven to solve it" (p. 94).

In the third place — but perhaps to some readers this will appear to be an advantage — our author has no general theory of knowledge; and he passes by the most obvious epistemological considerations without so much as a nod of recognition. At times we are led to expect more, and our disappointment is proportionately great. Certain geometrical and mechanical principles are found to be, not true indeed, but maximally convenient (pp. 39, 98); and we pass on to other matters without once recalling that for an important school of thinkers truth is no more than economy of experience. In a very brilliant section on the "Meaning of Physical Theories," M. Poincaré declares that real objects are unknowable; "nature will eternally hide from us. The true relations between these real objects are the only

reality we can attain to, and the only condition is that the same relations exist between these objects as between the images by which we are forced to replace them. . . . To those who find we restrict too much the domain accessible to the scientist, I answer: These questions which we interdict to you and which you regret, are not only insoluble, they are illusory and have no meaning" (pp. 114, 116). Yet the distinction here assumed between the nature of objects and the relations between them, and the conception of identical relations subsisting between radically different terms (objects and images) raise not a moment's suspicion — despite the fact that in the historical discussion which follows the distinction shrinks to a mere recognition of relevant and irrelevant elements in hypotheses (pp. 116, 117).

In a word, the whole machinery of M. Poincaré's mind is essentially mathematical. His mode of investigation — the problems which appeal to him, the analysis to which these are subjected, the ideals of demonstrative cogency which govern the whole process — is simply that of the modern logic of mathematics, such as the phenomena of a multiplicity of algebras and geometries have called into existence. The bridge between mathematics and epistemology is almost wholly from the former side of the gap.

As the title of the work indicates, the subject of the present investigation is the place and function of hypotheses in science. The net outcome is somewhat as follows:

There exist two very sharply distinguished classes of hypotheses.[1] The one class consists of certain of the fundamental principles of the mathematical sciences; the other embraces the gradually developing results of the experimental sciences. The former are really *disguised definitions*, framed by the human mind with perfect freedom, according to its greatest convenience; like other such definitions they are purely *conventional*, and hence neither true nor false; though arising out of experience, they can be neither verified nor refuted by experience. The latter are veritable inductions, through which anticipations of experience are made possible; they spring from a tendency of the mind to seek simplicity beneath apparent complexity — a tendency for which no sufficient logical justification can be given, but without which science would be impossible.

At the outset, a certain misinterpretation — which Professor Royce apparently commits in his otherwise excellent introduction — is not

[1] A third class, of which a very interesting account is given (*cf.* pp. 2, 109), but which we cannot here consider, consists of hypotheses made to facilitate calculations whose results they do not affect.

unnatural; namely, that the theory of conventional hypotheses is to be conceived as a substitute for the Kantian theory of the *a priori*. But our author clearly does not so conceive it. On the contary, the latter theory is held by him in firm conjunction with the former, and his first chapter is devoted to a demonstration of its indispensability. In the course of the work, two examples of *a priori* principles are given: the formula of demonstration by 'mathematical induction' (p. 13), and the 'group'-concept (p. 53). It is the former of these that is considered in the opening chapter, and the arguments employed are worth noting for the light which they throw on the author's conception of the relation between analysis and synthesis in thought.

The formula of mathematical induction is as follows: Suppose, first (major premise), that if a certain theorem is true of any positive integer x, it will then be true of $x + 1$; and suppose, secondly (minor premise), that this theorem is actually true of 1; then (conclusion) it will be true of all positive integers. M. Poincaré is to prove that this is a synthetic judgment *a priori*. Its *a priori* character he infers from the combined facts of its absolute universality and obvious independence of convention. The main point of the argument lies, therefore, in showing that it is truly synthetic, *i. e.*, not reducible to an identity; or, in other words, that demonstration by mathematical induction is not reducible to syllogistic form. To prove this, M. Poincaré shows that the demonstration may be expressed in the form of an infinite series of syllogisms (p. 11), and concludes (p. 12) that the syllogism is therefore inadequate to express its true nature. He fails to perceive that the major premise — quite apart from the minor — may be transformed to read: If a theorem is true of x, it is true of every integer greater than x; when, if the minor premise be added — It is true of 1 — it follows in true syllogistic fashion that, it is true of every integer greater than 1. As for the transformation of the major premise, that may easily be justified as follows: If there be any integers greater than x of which the theorem is untrue, let y be the least of these; then the theorem is true of $y - 1$ and untrue of $(y - 1) + 1$, which is impossible; hence, if the theorem is true of x, it is true of all greater integers. The formula of mathematical induction is thus neither more synthetical nor less analytical than the concept of the number-system upon which it is based.

We pass on to the more interesting questions pertaining to the first class of hypotheses. The examples considered are: (1) The conception of a continuous number-system, (2) the geometric axioms,

and (3) the principles of the classic mechanisms and of the more recent energetics. The case of continuous number need not long detain us. M. Poincaré shows in the usual fashion that this conception implies the intercalation of new elements (fractions and surds) between the elements of the system of whole numbers; and, furthermore, that these intercalated terms are mere symbols, having no meaning apart from the processes which gave rise to them and the relations in which they consequently stand. "The mind has the faculty of creating symbols, and it is thus that it has constructed the mathematical continuum, which is only a particular system of symbols" (p. 23). He does not consider the possibility that the positive integers are neither more nor less symbolical — equally destitute of meaning apart from their origin (the counting-process) and their consequent mutual relations. Measurement, he tells us, requires "the aid of a new and special convention" (p. 24). Should we not rather say that measurement of some sort is essential to the counting-process itself; and that equality of units means simply their mutual replaceability for the purposes in question? The word 'convention,' as it is here employed, means so much and so little as to call for incessant re-explanation.

The treatment of the geometric axioms is to my mind the most valuable and suggestive part of the work. That its conclusions are not entirely satisfactory is mainly due to the author's fluctuating and half-hearted adherence to the doctrine of the relativity of space and of motion. As a philosopher, he feels compelled to adhere to it; but, as a geometer, the contrary doctrine would be very convenient to him (p. 89). Like Mr. B. Russell, he takes Newton's argument for absolute motion (the polar flattening of an isolated rotating sphere) quite seriously; but instead of capitulating wholly, as the English logician feels constrained to do, he finds that "all possible solutions are equally repugnant," and hence proceeds to the conclusion that the affirmation or denial of the rotation would be equally true, but that the former hypothesis would be more convenient as permitting a simpler expression of mechanical laws. Acceptable as this conclusion is, we wonder that he does not remark that the rectilinear components of the motion of each particle of the sphere would be entirely real in the most relative of spaces — even though the axes of reference should rotate with the sphere itself. The suppositious motion is thus resolvable into a complex of real and observable strains; it is these that would explain the polar flattening, *just as they would likewise explain it if the body were surrounded by all the hosts of heaven;* and the *meaning*

of the rotation, if it were asserted, would consist precisely in the reference to these real phenomena, analogous to the phenomena attending the rotation of smaller bodies upon the surface of the sphere. Where, then, would be the advantage, whether for physicist or geometer, in a theory of absolute space?

But M. Poincaré's position is more precarious than I have yet indicated. Though all motion be relative, he believes in a certain absoluteness of space itself. It is for him a real individual entity, thoroughly separate and distinct from physical objects — "objects, which," as he says, "have nothing in common with those geometry studies" (p. 99). It is on this ground that he declares: "Experiments only teach us the relations of bodies to one another; none of them bears or can bear on the relations of bodies with space, or on the mutual relations of different parts of space" (p. 60); and that is why, after all his precautions, such expressions as the "absolute orientation of the universe in space" and the "rapidity with which this orientation varies" retain such an attraction for him, even though he must add that "this orientation does not exist" (p. 89).

Over against the space of geometry, our author recognizes a 'perceptual space' with a three-fold form, visual, tactual, and motor. We have not leisure to examine the curiously dogmatic sensationalism upon which this notion of perceptual space is here founded. Suffice it to mention, as a specimen of the argument, that visual space is bi-dimensional because the retinal image is projected upon a surface (p. 41). Our concern is with geometrical space.

This space, we are told, belongs to no one of our representations individually, but is suggested to us by studying the laws according to which these representations succeed each other. These laws refer directly to the displacements of solid bodies; why indirectly they should characterize a further entity to be called 'space' we are not clearly informed. It is remarkable that these laws of displacements may in part be summarized by the statement that displacements form a 'group' — the general group-concept being one of the *a priori* forms of our understanding. (Of this latter proposition no proof is anywhere attempted.) However, a multiplicity of conceivable groups are each capable of satisfying the requirements. Thus, not only the Euclidean, but various forms of non-Euclidean geometry, afford a quite sufficient basis for the correlation of all possible displacements; and from the point of view of strict truth no one of these has any advantage over the others. The sole preëminence of the Euclidean geometry lies in

its greater simplicity and consequently greater convenience.[1] Systems of displacements are quite conceivable — mechanicians can even make models of them — which would be more conveniently described in non-Euclidean terms; though, again, these could be perfectly, if somewhat cumbrously, described after the Euclidean fashion.

There is so much penetrating sagacity in these observations, that the element of falsity stands out with glaring distinctness. It is the superstition of absolute space. M. Poincaré does not realize that the hypothesis of (let us say) a Lobachevskian space and the compensating mechanical hypothesis which would then be necessary would simply cancel each other. It is as if one should say: Everything in the world is growing larger, and the acceleration which a given force produces in a given mass in a given time is increasing too. When one has said that, one has said nothing; it is a meaningless tautology: *a* is *a*. Now the Euclidean geometry, with its corresponding mechanics, is simply science stripped as far as possible of such tautologies. The important truth which M. Poincaré has thrown into striking relief is that geometrical and mechanical truths are correlative and mutually complementary; and this he can only express by saying that "experiments have a bearing, not on space, but on bodies!"

Thus, read in their proper connection, the Euclidean axioms are *not* mere conventional definitions, lacking truth or falsity. Comprehended as part of a larger system of relations, they represent a significant analysis of a certain aspect of experience. It is perhaps beyond the province of the reviewer to question whether truth is ever more than this. No doubt, if the ray of light, moving in an apparently homogeneous medium and the path of the apparently freely moving projectile returned upon themselves within the limits of our observation; and if an apparently taut and inelastic cord of a certain length could move freely, though its extremities were fixed — no doubt in such a case a more complex analysis would be necessary; but, in the absence of any such motive, the greater complexity would be so much sheer tautology.

We are now able to pass over very briefly our author's account of conventional hypotheses in mechanics. It is but his way of stating the truth, that force, mass, and density — yes, and space and time as well — are correlative terms without meaning apart from their mutual

[1] One slip occurring in the discussion of the non-Euclidean geometries is worth mentioning. "Many defective definitions [of the straight line] have been given, but the true one is that which is implied in all the demonstrations where the straight line enters." And the author proceeds to define it as an *axis of rotation*! But has the straight line no significance in Flat-land?

relations. They represent an analysis of the phenomena of moving bodies — no doubt the simplest analysis possible. This simplicity, with the attendant convenience, is all the virtue that M. Poincaré finds in them as over against an infinite number of possible analyses. But here again we must be cautious. The principles of mechanics are indeed meaningless each without the others. But together they comprehend an induction of the highest significance, which can only be obscured, n t obliterated, by the tautologies which an unnecessarily complex analysis would impose upon them.

A further logical confusion runs through this part of the discussion, and especially through the chapter on energetics. The principles of mechanics are said to possess two aspects: first, as "truths founded on experiment and approximately verified so far as concerns isolated systems"; and secondly, as "postulates applicable to the totality of the universe and regarded as rigorously true" (p. 98). But why this reference to the universe? And is any such distinction between inductions and postulates really called for? To be sure, the principles relate always to simple cases, that is, to isolated systems, and experiment knows no such. But surely the conception of the *limit* is entirely adequate to express all this; the ideal cases referred to by the principles are simply limiting instances. Now, though the mathematician sometimes for special purposes speaks of the infinite as a limit, he knows that it is really a very poor example — because it cannot be approached. So, unless we are wantonly to assume the universe to be finite, there is very little profit in referring mechanical principles to it. No, here as elsewhere it is as an instrument of *analysis* that the conception of limits is helpful. The phenomenon is a complex, of which our mechanics demands the analysis. Shall we say, into elements? Yes, if it be understood that the element is a category which simply expresses the restricted compass of present knowledge. Of absolute elements science knows nothing and has no need — any more than it has of a finite universe.

We must deal even more briefly with Part IV, treating of hypotheses of the second class — that is to say, inductive generalizations. We have space only for a word upon two important points. Induction, it is declared, rests upon a faith in the simplicity of natural law — "ordinarily every law is held to be simple, till the contrary is proved;" and yet in the history of science we find not only simplicity appearing behind apparent complexity, but sometimes also extreme complexity lurking behind apparent simplicity. How, then, is the faith in simplicity to be justified? And yet science cannot subsist without

it. I cannot see any real difficulty here. Our faith in simplicity, so far as science depends on it, is by no means a belief that the simple is as such more probable than the complex; we should in general even incline to the contrary opinion. Our faith merely declares that an unmotived complexity is dangerous; or, more explicitly, that, other things being equal, the errors arising from a simple hypothesis will probably be less than those arising from a complex one; for even should the truth itself be exceedingly complex, the simple hypothesis is likely to be closer to it than the more complex one. But this is not paradox; it is common sense.

A chapter upon the "Calculus of Probabilities" is seriously weakened by an indefensible distinction between subjective and objective probability, the latter conception being a mere mass of direct self-contradictions. If one observes a game of chance "*a long time*," we are told, "he *will* find that events *have taken place* in conformity with the laws of the calculus of probabilities" (p. 132); and this is the phenomenon of objective probability which M. Poincaré confesses himself helpless to explain. But the phenomenon is simply a confusion of two points of view, the uncertainty before and the certainty after the event. The conformity to the calculus, if it occurs, is a fact and not a probability — a fact, moreover, with which science is quite competent to deal.

I fear that the reader has been given but a slight notion of the exceeding interest and suggestiveness of this work. If there is much that should awaken caution, there is also a rich fund of wise and penetrating observations. Those who are least attracted by the author's conclusions may well be repaid for the reading by the impressive survey which he gives of the present state of mathematical and physical science.

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Erkenntnis und Irrtum: Skizzen zur Psychologie der Forschung. Von E. MACH. Leipzig, J. A. Barth, 1905. — pp. ix, 461.

Science is part of the human animal's reaction to its surroundings. If so, it must demonstrably serve the common end of such reactions — that of self-preservation. But the ease with which a biological function is ascribable to this or that detail of behavior varies from reaction to reaction. Obviously, we may more readily establish the service rendered by eating to the general end of living, than detect in a work on differential equations the perfecting of an arm with which to carry on the struggle for existence. To give to these higher products

of our knowing a place among our 'reactions to environment' by catching the teleological aspect of each is, then, a task not only worth doing for the sake of a certain continuity thereby won for our thought, but, one suspects, difficult of accomplishment.

The idea is not of course new. As a matter of personal reminiscence, the reviewer would cite two little works of Schneider, *Der thierische Wille* and *Der menschliche Wille*, which attracted favorable notice in their day. But the problem has longer ancestry and larger relationship in the history of thought. The interest of seeking a function for bodily parts apparently contributing nothing to the purposes of life is as old as physiology; while the idea of bringing out the teleological aspect of behavior not associated with a special organ is beautifully illustrated in Darwin's *Expression of the Emotions*. Development of the problem consists, I take it, in the extension of the concept of 'behavior' to regions not contemplated by those who have previously interested themselves in the research of 'functions.' Hence the novelty of the work before us is to be judged by the generality of its ideal: "Der Naturforscher kann zufrieden sein, wenn er die bewusste, psychische Tätigkeit des Forschers als eine methodisch geklärte, verschärfte und verfeinerte Abart der instinctiven Tätigkeit der Tiere und Menschen wiedererkennt, die im Natur- und Kulturleben täglich geübt wird" (p. iv).

To contribute to the realization of such an ideal no one could be better equipped than Mach, with his unsurpassed command of the history of science. As some measure of his reach, we may take an example or two from his later chapters, "Deduktion und Induktion in psychologischer Bedeutung," "Zahl und Mass," "Der physiologische Raum im Gegensatz zum metrischen," "Zur Psychologie und natürlichen Entwickelung der Geometrie," "Die physiologische Zeit im Gegensatz zur metrischen." These sketches deal with the biological aspects of the more mathematical sciences; the problems of mechanics and physics, together with certain technical terms connected with the methods of those sciences (such as 'analogy,' 'hypothesis,' 'problem') having served as topics to earlier chapters.

In estimating the function of logical deduction, Mach has not advanced beyond the thought of Mill: deduction is not an instrument for the discovery of new truths; in the end it yields no more in the way of 'Erfahrung' than was furnished it at the outset. Its function is to serve as a labor-saving device. "Dieselbe (logische Operation) bringt uns die Abhängigkeit der Erkenntnisse von einander zu klaren Bewusstsein und erspart uns eine besondere Begründung für einen Satz zu suchen, der schon in einem ändern enthalten ist" (p. 302).

If we are merely looking for some function that can be assigned to logic, no doubt one is here indicated. But if we ask of a discussion of logic that it contribute something to the settlement of historical issues, we are tempted at this point to lament lost opportunities. On the one hand, the 'psychology of logic' has never been more thoroughly threshed over than in current literature. This material Mach has simply ignored, and his results would be judged ultra-conservative by those most in sympathy with his motives. On the other hand, the anti-psychological tendencies of the older rationalism are dismissed, we may assume, with the observation that logic is no 'instrument of discovery.' Yet surely the psychology of rationalism would offer a beautiful illustration of the part that 'economy of thought' has played in inspiring human effort. And the outcome is somewhat more than a horrible example.

The treatment of number, the attempt "den Ursprung der Zahlvorstellung und des Zahlbegriffes aus dem unmittelbaren oder mittelbaren *biologischen* Bedürfnis psychologisch aufzuklären" (p. 318), is too detailed to admit of more than a limited reproduction. The needs of individual life demand a simple number concept; social intercourse, particularly trade, leads to the invention of a more or less economical notation for larger numbers; the operations of arithmetic are so many short cuts of counting; the later algebraic formulation of the laws of arithmetic facilitates and extends its application. The history of the development of our complex number system and its arithmetic, the construction of a number continuum, are easily shown to have an economical motive, as soon as we understand the more technical services they render the scientist.

All this is set forth with a wealth of illustration that makes the sketch instructive, paragraph by paragraph. But it may also seem in conclusion somewhat obvious unless it is saved by a certain polemical intention. This intention is indicated in the following remark: "Man bezeichnet die Zahlen oft als 'freie Schöpfungen des menschlichen Geistes.' . . . Das Verständnis dieser Schöpfungen wird aber weitmehr gefördert wenn man den *instinctiven Anfängen* derselben nachgeht und die Umstände betrachtet welche das Bedürfnis nach diesen Schöpfungen erzeugten. Vielleicht kommt man dann zur Einsicht dass die ersten hierher gehörigen Bildungen unbewusst und biologisch durch materielle Umstände *erzwungen* waren . . ." (p. 322).

Whose is the view with which Mach is here contrasting his own? The name of Kant is not brought into this (as it is into many another) discussion; yet if the author is not in his own mind opposing his re-

sults to an *a priori* theory of number, one is at a loss to place the historical reference.

Will the reviewer be judged captious, if, after complaining that the treatment of logic was too feebly historical in its reference, he now finds that the study of number is not justified in pronouncing on such an historical issue? And yet would not Kant, who insisted that experience is our only teacher, be astonished to find his doctrine of *a priori* number opposed on the ground that the progress of our learning from experience could be classed among the phenomena of an organism's adaptation to its environment?

On the other hand, a real issue seems to lurk somewhere in the implied attitudes of the Kantian and of the Empiricist. For Kant, number was a concept which no possible experience could fail to illustrate, seeing that experience involved manifoldness in its meaning. For Mach, "würde die physische *Erfahrung* nicht lehren *dass eine Vielheit aequivalenter, unveränderlicher, beständiger Dinge existiert* . . . so hätte das Zählen gar keinen Zweck und Sinn" (p. 324). We have only to accept the implication that 'Erfahrung' *might*, without thereby ceasing to be 'Erfahrung,' fail to reveal the existence of this manifold, just as it might fail to present Jupiter with four satellites, and the issue between the two schools is drawn. Only, to the deciding of this issue, the method to which Mach gives such elegant expression can contribute nothing. It surely throws no light on the question as to whether experience could exist otherwise than as a numerable manifold to point out, say, that an accident of human anatomy conducted us to a decimal system of notation; that, had we been a twelve-fingered race, we should probably have developed a duodecimal system, to which, as it is, other considerations of utility may yet conduct us. And the like of other analyses of the empirical needs that are reflected in our developed number system and its arithmetic. In a word, the *limits* to the variability of experience cannot be treated by any method which confines itself to showing that *if* the condition *A* varied, the result *B* would vary with it.

I have come perhaps too quickly to this estimate of what our author's method can accomplish, and in what respects it promises to throw no new light on historical problems. I am reduced to repeating much the same comment on the chapters that deal with geometry and chronometry. In both cases, to be sure, we have problems worthy of discussion for their own sake. Thus, confining ourselves to the first topic, we are aware that perceptual space and the space of geometry are different enough; indeed, when we come to compare

the two we are reduced to such points of correspondence as those which Mach enumerates: "Beide Räume sind dreifache Mannigfaltigkeiten. Jeden Punkt des geometrischen Raumes A, B, C, D . . . entspricht ein Punkt A′ B′ C′ D′ . . . des physiologischen Raumes. Wenn C zwischen B und D liegt, so liegt C′ zwischen B′ und D′. Man kann auch sagen: einer kontinuirlichen Bewegung im geometrischen Raum entspricht eine kontinuirliche Bewegung des zugeordeten Punktes im physiologischen Raum." The extent of this divergence of the two spaces introduces the question: "Wie kommt es nun, dass der physiologische Raum vom geometrischen sosehr verschieden ist? Wie gelangt man doch von erstern Vorstellungen allmählich zu den letzteren" (p. 337 f.)

Every elementary sensation consists of two factors: quality and local sign (*Sinnesempfindung* and *Organempfindung*). "Man kann sagen, dass der physiologische Raum ein System von *abgestuften Organempfindungen* ist." This arrangement of the discrete Organempfindungen in a coördinated system is the outcome of the organism's repeated reactions to stimulation . . . "Die vollkommenste gegenseitige biologische Anpassung einer Vielheit von Elementarorganen kommt eben in der räumlichen Wahrnehmung besonders deutlich zum Ausdruck" (p. 339).

It is the experiences which follow on locomotion that conduct us, by an imperceptible transition, from this anisotropic and limited space perception to the geometer's space concept. "Die beliebige Locomotion des Leibes als Ganzes und die Möglichkeit beliebiger Orientierung fördern die Einsicht dass wir überall und nach allen Richtungen dieselbe Bewegungen ausführen können, dass der Raum überall und nach allen Richtungen *gleich* beschaffen, und dass derselbe als unbegrenzt und unendlich vorgestellt werden kann" (p. 341).

This is an excellent portrayal of the experiences that guide us in the conduct of life to the construction, first of a physiological, then of a geometrical space. The progressive utility to the organism of these successive constructions is made obvious, and as the fixing of this utility is more difficult than in the case of the development of the number concept, the study has so much the more value for the psychologist. But here again the author does not feel that the interest of his effort is exhausted in having brought clearly to light the biological importance of the space concept and of its geometry. He feels that the outcome gives him a right to pronounce on certain historical issues, and now it is explicitly the Kantian doctrine that is placed in contrast. "Kant hat behauptet: 'Man kann sich niemals

eine Vorstellung davon machen, dass kein Raum sei, ob man sich gleich ganz wohl denken kann, dass keine Gegenstände darin angetroffen werden.' Heute zweifelt kaum jemand daran, dass die Sinnesempfindungen und die Raumempfindungen nur *miteinander* ins Bewusstsein treten und aus demselben wieder verschwinden können. Dasselbe muss wohl von den betreffenden Vorstellungen gelten. Wenn für Kant der Raum kein 'Begriff' sondern eine 'reine [blosse?] Anschauung *a priori*' ist, so sind die heutigen Forscher sehr geneigt, den *geometrischen* Raum für einen *Begriff*, und zwar für einem durch *Erfahrung* erworbenen Begriff, zu halten" (p. 344).

Here, again, the student of the history of philosophy must, if I am not mistaken, have the impression that the author's method does not justify him in comparing his results with Kant's. Not but that he is warranted in calling the space concept used in geometry a 'Begriff', and insisting that the motives that lead us to the formation of such a concept are to be sought in the character of our experiences. What, then, one asks, is to prevent Mach from opposing 'Begriff' to 'Anschauung,' and further an 'Erfahrungsbegriff' to a 'reine Anschauung,' since Kant invites just this manner of contrasting portions of our knowledge?

I answer with enforced brevity that Kant and Mach are using different tongues. Kant meant, in distinguishing 'Anschauung' from 'Begriff,' to contrast two kinds of relationship whose 'formal properties' were as different as those, say, distinguishing 'between' from 'like.' Mach means by a 'Begriff' any notion that involves 'abstraction' from content (*Anschauung*). "Das blosse System der Raumempfindungen können wir nicht anschauen; wir können aber von den als nebensächlich betrachteten Sinnesempfindungen *absehen*, und wenn man diesen leicht und unvermerkt vor sich gehenden Prozess nicht genug beachtet, kann leicht der Gedanke enstehen, man habe eine reine Anschauung vollzogen" (p. 344). Kant meant the phrase, "unabhängig von Erfahrungen," to denote any concept which is necessary to define what the term 'Erfahrung' means. Mach means by a 'durch Erfahrung erworbener Begriff' one that is developed in the individual and in the race in response to stimulation. Kant's 'Anschauungen *a priori*,' then, were no less abstractions from experience in this sense than are Mach's. But Kant had the ingenious idea of asking: Are there no limits to the variations we can suppose possible in experience? And he answered that if 'experience' has a meaning, all that is involved in this meaning is indispensable to experience. Individuality and manifoldness seemed to him to be thus involved, and with them the *principia individuationis*, space and

time. Now in both premise and inference Kant may have been quite wrong; but he put a question that had depth and dignity, he suggested a method of discussing it, and the philosopher with historical training finds it difficult to repress a certain impatience when he is asked to compare Kant's results with those obtained by a method which may indeed employ certain terms in common with Kant, but which has evidently been conceived with no comprehension of what this deep but crabbed old thinker was struggling to express.

If I have referred frequently to the contrast between Mach's empiricism and the results of Kant, it is because Mach himself has chosen this means of orienting himself historically. But Kant is an accident: had he not invented a certain way of putting the question, the mere evolution of the type of empiricism we are here dealing with would have forced *us* to invent one. In a characteristic chapter Mach pictures the growth of knowledge as an "Anpassung der Gedanken an die Tatsachen und aneinander" (p. 162 ff.). The phrase serves admirably to convey a truth respecting the evolution of science, and to call attention to an analogy between widely differing examples of adaptation. The scientific interest of this analogy can be appreciated by one who has never stopped to enquire what this term 'fact' means, to which our science and our organism equally adapt themselves. It is sufficient to assume that whatever 'fact' means in the one case it means in the other. But there are connections in which we are not content with establishing a sameness of meaning, but in which we demand the common definition of 'fact.' When the demand is brought to bear on any illustration the empiricist may offer of an "Anpassung der Gedanken an die Tatsachen," we seem to discover that the situation would serve equally well to illustrate an "Anpassing der Tatsachen an die Gedanken." Whither does this discovery lead us? It may not lead us to Kant, certainly,— he worked more than a century ago. But that Kant did his part in leading us to the discovery is one of his chief claims on our gratitude. Neither the general question nor Kant's peculiar contribution to it can be discussed on the basis of an empiricism that has never stopped to ask itself, 'What is a fact?'

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La moralisme de Kant et l'amoralisme contemporain. Par Alfred Fouillée. Paris, Félix-Alcan, 1905. — pp. xxiii, 375.

According to M. Fouillée, contemporary ethical theories may all be classed under one of two heads, the moralism of Kant and his fol-

lowers or the non-moralism represented equally by the utilitarians and by Nietzsche. Widely as these two views of morality differ, they both imply a fundamental antithesis between law or reason and nature. Since the ethics of the Kantians is based upon the former, it is compelled to reject all consideration of ends and to be satisfied with a form bare of content. Their opponents, on the other hand, since they regard nature as the only reality, avoid the difficulties of the categorical imperative, indeed, but do so at the expense of the morality which they are seeking to explain and whose existence they end by denying. To choose between the two positions is difficult. If one accepts the constantly growing mass of scientific knowledge, one seems forced to regard morality as valuable, if at all, only as a means to an end. If one clings to the conviction that such a morality is not really moral, one must turn to the Kantian formalism, which denies all connection between ethics and the knowledge of the phenomenal world. Both standpoints are equally untenable. M. Fouillée proposes to solve the dilemma by showing that there is a middle ground, namely, the ethics of the *idées-forces*; but before doing so it is necessary to prove that the dilemma is an actual one and that both moralism and non-moralism are inconsistent with themselves. This forms the task of the present volume.

The three great difficulties of the Kantian system were stated by Kant himself and are as follows: (1) Can the categories be applied to the objects of the pure practical reason? (2) Can man be at the same time free in the noumenal and determined in the phenomenal world? (3) Is there a pure reason capable of becoming practical by its own power? Kant's solution of these problems is less satisfactory than his statement of them, and his treatment is criticised in detail.

That the existence of duty cannot be proved in any of the ordinary ways is of little importance, since duty, according to Kant, is a fact and needs no proof. We can become conscious of practical laws just as we can of theoretical principles, by observing the necessity with which the reason imposes them upon us, and by abstracting from all empirical conditions. The conception of a free will, likewise pure, is the result of such observation, in the same way that the concept of a pure understanding follows from the pure theoretical principles. The moral law itself is not a fact of consciousness; what is present there is the reason positing itself as sole legislator without any admixture of necessarily empirical motives and ends. We are asked to accept as a fact "a formal and universal law of which we can know *a priori* neither to what it corresponds, whence it comes, what it is,

and by what power it can cause determinations; nor *a posteriori*, if it ever has caused or even if it has the power to cause any event in this world subjected to the causality of universal mechanism" (p. 56). Reality is accorded at a single stroke to a supra-sensible object of the category of causality, that is, to liberty, and as a result to the noumenal ego and all the other conditions of the moral world. Kant and his critics have seen the difficulty, but only partially, and have accordingly devoted themselves to considering whether the concept of causality can be applied to objects of the pure practical reason. M. Fouillée maintains that there lies a difficulty no less great in the application of the category of causality to the very conception and affirmation of the moral law. Every element belonging to such a conception is drawn from experience and has no meaning outside it. In short, the distinction between the theoretical and the practical point of view is made much too absolute. If the idea of the universal and unconditioned loses all value as soon as an object is attributed to it, how can it become a principle of action? Why should I sacrifice the happiness offered by the phenomenal world for a law which can neither be affirmed nor stated? The practical necessarily includes the theoretical and is subject to the same conditions.

In fact, the *Critique of Practical Reason* should rather be entitled a critique of experience, for in it the reality of the pure practical reason is asserted, not criticised. There is no adequate recognition that the reason itself constitutes a problem. The categorical imperative, the idea of duty, might be proposed as an article of belief; but it cannot be shown to exist as a necessary condition of moral action, which may perfectly well be explained in other ways.

Going on to the formal nature of the Kantian ethics, M. Fouillée points out that, although morality implies a form that can be universalized and we have here a useful method of determining the moral value of an action, Kant is in error in regarding this criterion as constituting in itself the character of the moral good. A universal form always implies some content. We cannot conceive pure form altogether distinct from matter; and if we could, such bare form would have no moral worth, unless some conception of ends were united with it. The objective value attributed to the universal form presupposes an object good in itself, although perhaps incapable of determination by us.

A second characteristic of the Kantian conception of duty is found in its imperative nature. A command implies law, which in this case exists for its own sake and is united only synthetically with the idea

of the Good. Yet such a union is an impossibility, and is defended by Kant only because he confuses the intelligible and the sensible will. He passes from the synthesis between the law and the intelligible or free will, which is unknown and unknowable, to a synthesis between the law and the sensible will, which is determined. An imperative which applies to the noumenal world is unthinkable, because if the latter exists at all, it exists eternally such as it is; and, moreover, the very concept of liberty is merely the negation of determinism, and has no positive content. On the other hand, no less absurdity is involved in an imperative for the phenomenal world, in which every event, whether of object or subject, is linked causally with preceding events. Moreover, the necessary validity attributed to the imperative is possible only on the supposition that the human reason is the absolute reason, an assumption expressly disclaimed by Kant. Again, the conception of liberty as a spontaneous and intelligible causality in the noumenal world contradicts the initial presuppositions of the system, for it involves the transcendent use of half-a-dozen categories. The very existence of liberty has no proof save the assertion of the objective validity of the moral law with all that that implies. The categorical imperative is a fact of the reason and is free from every sensible element; then when it determines the will, the action is that of the pure reason, and no further proof of the causality of the noumenon is needed.

Great as are these and other difficulties in the Kantian conception of liberty, they are as nothing compared with the problem of reconciling noumenal liberty with phenomenal determination. How can a supra-natural liberty find expression in an empirical case subject to natural necessity? Even if this is supposed to be made possible in some incomprehensible manner, a second question remains, namely, why the intelligible will does not always realize itself, but is sometimes fulfilled and sometimes not. Moreover, my intelligible liberty, if it exists, must be reconciled not only with my own phenomenal acts, but with the whole phenomenal world in which I find myself, and in which my very affirmation of our unconditioned duty and power to fulfil it is the direct result of the series of empirical causes.

To save himself from these absurdities, Kant supposes a single intelligible act which determines my character and of which all my empirical life is the consequence. Yet this recourse to a free act of the intelligible ego does not avoid the real difficulty. The intelligible ego is a word without meaning; and even if one supposes that such an ego can lay down a law for itself in the intelligible world, how can it do

so for the empirical ego which is bound by necessity? Kant is constantly involved in circular arguments, in which unacknowledged presuppositions alone make it possible for him to reach the desired results. A true critique of the intelligible would have allowed him to go no further than the following proposition: "Morality consists in not acting according to the sensible appearances alone, but in acting in accordance with an inner and superior ideal to which we attribute an eternal foundation of reality, without being able with certainty to affirm that reality nor with certainty to determine its nature" (p. 190).

The limits of this review make it impossible to do more than touch upon the main points of M. Fouillée's arraignment of the Kantian ethics, but perhaps enough has been said to indicate the character of his arguments and to show their clearness and force. The great quantity of the literature concerning Kant almost forbids our modern critics to say anything absolutely new on the subject; but M. Fouilleé has succeeded in presenting the matter from a somewhat new standpoint and in making evident the inconsistencies of Kant's position. Whether the solution of the difficulties proposed is any more free from like inconsistencies, is of course a different question, and one that can hardly be discussed before the publication of a complete treatment of the ethics of the *idées-forces*.

The chapters upon non-moralism are divided into two parts, the first of which deals with hedonism, the second with the ethics which substitutes power for pleasure. The author brings forward the usual objections to regarding pleasure, first, as the end, and second, as the cause of action; and, while he admits that it forms a necessary element in both end and cause, maintains that it is indispensable only in the sense in which every part is essential to the whole. The tenability of the doctrine of egoism is next examined and rejected, and the relations between egoism and altruism set forth as they appear in M. Fouillée's own theories. The section is then ended with a chapter on ethical as distinguished from psychological hedonism. The treatment of the main thesis of ethical hedonism, namely, that pleasure alone is of value, is neither as logical nor as suggestive as most other portions of the book. For instance, qualitative distinctions in pleasure are defended on the ground that quantity implies quality and without the latter is a pure abstraction (p. 234). True enough, but no hedonist has ever thought of asserting the existence of a pleasure possessing no quality, although many have considered the quality of all pleasures as the same.

With regard to the final division of the book, one need not accept

the doctrines of Nietzsche in order to feel that here they have been rather hardly treated. Yet if the tone of the discussion cannot be called that of unprejudiced calm, it may well be excused, when one remembers the extreme nature of the claims of Nietzsche's followers, who do not hesitate to ascribe to him all the logic and all the appreciation of æsthetic and other values to be found in the whole of the nineteenth-century philosophy. An account is given of Nietzsche's metaphysics, psychology, and ethics, and a like conclusion is reached concerning them all. Wherever Nietzsche has approached the truth, he has consciously or unconsciously stolen a leaf from one of M. Fouillée's own publications; but in nearly every case his overwhelming propensity to distortion has led him to pervert these truths in such a way as to make of them absurdities. Quotations of considerable length from both Fouillée and Nietzsche are given to substantiate this position; but the similarity does not seem to be greater than that to be expected between two writers who in different ways both emphasize activity. That the philosophy of the *idées-forces* is the more logical and systematic, that it recognizes certain aspects of reality ignored by Nietzsche, must, I think, be admitted; but such an admission need not carry with it the denial of all save a perverted value to Nietsche's views. Moreover, M. Fouillée is wrong in making Nietzsche's ethics depend upon his metaphysics and psychology. The latter may be logically prior to ethics, but nevertheless for Nietzsche, as for many another thinker, metaphysics is an extension and application of ethical principles, rather than *vice versa*, and the two do not necessarily stand or fall together.

The conclusion of the whole criticism is, as has already been stated, that both moralism and non-moralism are false, and that the dualism inherent in both must be overcome by the monism of the *idées-forces*. Nature and experience are not so limited and so irrational as these dualists suppose, nor is reason so devoid of concrete content. The individual and the universal are not mutually exclusive but complementary. Whether the final thesis can be said to be sustained or not, will depend upon the forthcoming volume. That existing theories present great difficulties, and thus pave the way for the recognition of the need of something better is certainly proved, and with this the aim of M. Fouillée's book is attained.

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Aesthetik als Wissenschaft des Ausdrucks und allgemeine Linguistik, Theorie und Geschichte. Von BENEDETTO CROCE. Nach der zweiten durchgesehenen Auflage aus dem Italienischen übersetzt von KARL FEDERN. Leipzig, E. W. Seemann, 1905. — pp. xiv, 494.

To meet the demand of a wider circle of readers this important work, which originally appeared in 1901 and has already been extensively reviewed, has recently been translated into German. The book is divided into two parts. The first, occupying about one third of the volume, consists of the author's theory of æsthetics. To this is appended a history in which the development of æsthetic thought is concisely, though somewhat unsympathetically, presented. This latter portion really serves as a vehicle for tracing the origin of those views which the author himself entertains, the main contributors to which are: Aristotle, Giambattista Vico (hailed as the true founder of æsthetics), and Schleiermacher, — at first view a strange trio to the casual student of philosophy. For the rest, Croce's historical criticism is in the main destructive. The book is written clearly and forcibly throughout. Though I can hardly accept the author's philosophy at once, its suggestiveness, particularly with regard to matters of controversy, is undeniable. In this review I shall confine myself to Croce's main thesis together with certain points of criticism which it suggests.

Croce's system, for such it is, is based on the identification of art and intuitive knowledge, and the further contention that intuitive knowledge is the foundation of all knowledge. Intuition is particular in form, consisting of successive mental pictures all seeking expression. The expression is the work of art, and it is beautiful just in so far as it expresses its content with truth.

A second fundamental form of knowledge, the logical, is in a way dependent on intuition, yet finds its differentia in the *concept* which constitutes its true essence. The concept is a generalizing or relating activity of mind, and as such can never be adequately expressed, though what expression it may gain is of course æsthetic in form. Its reality, however, is rather to be found in symbols and suggestions which may be combined into propositions and definitions. True science is philosophy, and is, in fact, just this logical activity striving after definitions. It follows that the true logical activity is inductive, and all propositions containing no general term are by definition not logical but purely æsthetic.

Two sub-forms of activity complete the scale of human knowledge:

the economical and the moral; the former is the desire for a goal, the latter the desire for a reasonable goal.

The complete mental activities may, then, be grouped as follows: (1) Intuitive expression, the original activity of the mind behind which there exists only unexpressed sensation or nature; (2) the concept which abstracts or generalizes from the intuitive substrate; (3) the economical desire depending both on a concept of usefulness and on an intuitive content; and (4) the moral desire which depends on all three and is in addition reasonable.

Metaphysics is impossible, if by metaphysics we mean an operation of logical thought *sui generis*, for logical thought always works on intuitive factors. It is quite impossible to proceed from concept to expression or from the general to the particular, the bases of our knowledge being expressions, particulars. On the other hand, we may permit a metaphysics considered as the science of self revelation, which would be a logical treatment of æsthetic intuition.

Concerning 'feeling', which is generally supposed to play so large a rôle in æsthetics, our author conceives it to be a mere organic accompaniment which follows the æsthetic activity but of itself is passive in nature. Pleasure marks the successful expression, displeasure the unsuccessful, and corresponding judgments of beauty and ugliness result. All attempts at 'æsthetic hedonism' are vain, since an organic element is thereby magnified and made to dominate over real mental activity, whereas, in point of fact, it is but an accompaniment finding its expression in the intuitive truth of the whole.

With the denial of æsthetic feelings as such, go the 'pseudo-æsthetic' concepts of comic, sublime, tragic, etc. These are not subjects for æsthetic inquiry, says our author, but for psychology, being mere quantitative variations which psychology in its way attempts, rather vainly, to catalogue and investigate. For psychology is no true science, but should rather be termed one of the incomplete order, dealing as it does only with possible groupings of organic processes in varying intensities.

As the work of art is the result of the artist's expression for his intuitive mental pictures, so the appreciation of art consists in putting oneself in the artist's position and thus reproducing his mental activities. Judgments of taste which result are based on the degree of truth which the representation exhibits. History, which is really æsthetic both in content and method, since it has to do with particulars (individuals and events), never with generalizations, aids us in understanding and thus appreciating the art of various times by affording us a representation of those times.

Progress in science may be represented by a straight line, since it consists always in an inductive striving after more complete system and generalization. Progress in art, on the other hand, since its effort is to represent the moment, not the system, is in closed circles, — each phase, in a sense, being complete in itself. It follows that we can conceive of no human progress, because progress involves logical development, and humanity, as composed of individuals, cannot progress in this sense. The modern man penetrates further into the universe than did his forefather; his intuitive content is greater, but that is all.

In conclusion. Croce identifies more particularly the problems of language with those of æsthetics, thus declaring the futility of logical treatment with respect to grammar and the uselessness of striving after a universal language.

To sum up, art is individual intuitive expression, and as such does not partake of the logical mode of thought. Being *prior* to the logical activity, it does not permit of classified treatment. Æsthetic enjoyment is found in expression and in the reproduction of expression. It follows that processes of imagination or sensation, when unexpressed, are not æsthetic, thus excluding what we term 'beautiful thoughts' and also beauty in nature, because neither have been expressed by man. Furthermore, a science of æsthetics is impossible, though one notes with a smile that the author does not hesitate to term his treatise such. Science always involves logical generalization. History is not a science, neither is æsthetics. What then *is* æsthetics? A term for describing intuitive mental activity. To be sure, the problem of investigating this activity is turned over to the *new metaphysics*, but this is apparently a science of the future. Aside from the general logical method which of necessity is that of all science, no particular methods for it are laid down, those of psychology, which one might hope to employ, being, in general, discarded as worthless.

The value of any system is measured by its ability to embrace those facts of experience to which it is related. The system which we have before us, despite its marked ingenuity and apparent logical coherence, is nevertheless dogmatic, and, in its insistence on the elemental nature of intuition, quite as mystical as any of those 'transcendental' philosophies which the author so forcibly discredits. Restoring psychology to its proper place in Croce's system, *i. e.*, the place granted the 'new metaphysics,' and thence proceeding to investigate logically and introspectively the merits of the work, we find the facts of our experience frequently contradicted.

1. Intuitive and logical activity do not appear to be mutually exclusive with respect to the concept. On the contrary, it is rather generally recognized that the intuitive process is built on concepts, rudimentary or incomplete though they may be, quite in the same manner as is the logical. Indeed, there is essentially but one mental activity, and it is by a process of abstraction only that we proceed to analyze it at all. Therefore, it is incorrect to declare that such an expression as 'Peter goes walking,' involves only intuitive factors of expression and is not subject to logical or conceptual treatment.

2. Though Croce describes with considerable accuracy the productive activity of the artist, he can scarce be said to do full justice to the one who appreciates but does not produce art. Since the æsthetic enjoyment of the latter is limited to a reproduction of the artist's expressive activity, there appears to be no accounting for that beauty which is evident in certain aspects of nature. Yet one can scarcely deny that such pleasurable states do exist, and it is manifestly difficult to describe them adequately in terms of logical, economic, or moral activities.

3. If æsthetics be a science, it must form categories or concepts. From a psychological point of view, these are perfectly well justified both with respect to the mental factors which dominate and also with respect to the functional nature of the state. The author's critique of literary and artistic *genres* is in many respects salutary, but he seems to err by too sweeping generalizations. It is, of course, false to assert that painting, for instance, is an exclusively optic art, and as such depends entirely on visual factors. On the other hand, in the case of absolute music it is a notable fact that the association of visual ideas interferes with a full appreciation of the music. With respect to the 'pseudo-æsthetic' concepts — comic, tragic, sublime, etc. — these represent certain more or less well-defined functions of the æsthetic attitude, and consequently have a positive significance for the *science* of æsthetics.

4. Croce's definition of feeling, and especially of æsthetic feeling, is inadequate. As a passive organic factor which merely follows the mental activity, it means nothing. The evident presence of feelings as conscious factors seems to me best described in terms of a cumulative aspect of consciousness expressing the relative functional conformity or non-conformity of the mental factors present. As for differentiating the æsthetic from other feelings: the æsthetic denotes a conformity with respect to an end achieved; the logical, economic, and moral feelings, a conformity or non-conformity with respect to an

end desired. It follows, therefore, that, whenever an end is achieved, whatever may have been the activity by which it was brought about, the result, when present in consciousness, is æsthetic. Such a view does not prevent us from enjoying beauty in nature, in our own thoughts, or even in simple sensory states.

5. For Croce the æsthetic state is essentially active. But he has failed to distinguish clearly between mental activity and motor activity. Mental activity has for its general object the discovery of adequate motives for motor response. The motor response, in turn, has for an object the adjustment of the organism to its environment. A relative conformity of mental factors will, therefore, attend all such states of mind as denote unimpeded progress. But there will also occur intervals in which the end with respect to a certain situation is, or appears to be, achieved. This state will be marked by the absence of any dominant motor tendency, but not at all by the absence of a high degree of conformable mental activity. Such a state I should characterize as contemplative, or, in fine, an æsthetic attitude.

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NOTICES OF NEW BOOKS.

The Nature of Truth. An Essay by HAROLD H. JOACHIM. Oxford, The Clarendon Press, 1906. — pp. v, 182.

Mr. Joachim's book is an interesting and notable sign of the reconstruction that is going on in the idealistic camp along the line of questions which only a short time ago were considered settled once for all. It claims no positive result, but is an acute, though rather involved and at times scholastic criticism of three current conceptions of truth, — truth as correspondence, as a quality of independent entities, and as coherence. An attempt to understand the nature of correspondence results in bringing to the front the idea of teleological structure, and so in pointing away from the correspondence to the coherence type of theory, while the introduction of the 'mental factor' emphasizes the inadequacy of the notion as a final one. In connection with the second conception, where he has in mind chiefly Mr. Moore and Mr. Russell, he tries to show that the assumption that experiencing makes no difference to the facts is either false or irrelevant; and that, if this is so, a theory which sets out to vindicate the independence of truth must end by making truth a merely private and personal possession. Then in what constitutes the larger and, as it seems to me, the most valuable part of the book, the coherence notion is examined, with the result that it is condemned as failing to be finally and fully intelligible, though it is regarded as being relatively truer than the others. The discussion is an honest and clear-sighted recognition of certain fundamental difficulties to which the older idealists commonly closed their eyes. Thus, it is pointed out that the system of judgments which is presupposed in a true human judgment is after all a body of knowledge *about* reality; it is not meaning in the sense which the ideal of the coherence notion demands, — a 'significant whole' as an organized individual experience self-fulfilled and self-fulfilling. We therefore are again forced back upon the correspondence notion, in which coherence is interpreted as a mere formal consistency such as would leave the solid reality out; and this dualism we are unable to overcome by showing how such an 'otherness' has its place as a real moment in ideal experience. So in the final chapter there is an admirable analysis which lays bare the defects in the ordinary, easy idealistic doctrine of error, and which emphasizes its ultimate unintelligibility from the standpoint of the coherence type of Absolute. The conclusion is a tempered confession of ignorance, since we are compelled by the coherence notion to recognize certain demands which both must be and cannot be fulfilled. It would appear to me likely to prove a more fruitful path, if we were rather to question whether the adequacy of the coherence ideal as a metaphysical account of reality had not been too hastily assumed.

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Über die Erfahrungsgrundlagen unseres Wissens. Von A. MEINONG. (Abhandlungen zur Didaktik und Philosophie der Naturwissenschaft, Band I, Heft 6.) Berlin, Julius Springer, 1906. — pp. 113.

The appearance of this new work of Meinong within a scientific series, along with monographs upon electric lamps and optical instruments, is both a warning and a challenge, — a warning to the scientific philistine and a challenge to the technical philosopher. If, as the editor of the series remarks in his general introduction, the recent attitude of the natural sciences, — viz., the tendency to look upon all reflection upon the foundations of scientific knowledge as a philosophical luxury (in the evil sense of the word), — has given place to a more and more general and urgent call for natural philosophy, the opportunity to contribute to the satisfaction of the demand, offered to this most subtle and inveterate of dialecticians, is also in a larger sense a challenge to technical philosophy to show its worth.

In a general way the critical and modest, anything-but-naïve, realism that is here presented may justly expect to command the interest and respect of science. And although avowedly directed primarily to the attention of the scientist, it has also, for that very reason, indeed, a special interest for the philosopher, because enforced abstention from detail and singleness of purpose have made possible a relatively simple and compact statement of a realism which, in contrast to the old naïve point of view, as well as to the more modern phenomenalism and idealism of such writers as Mach and Pearson, holds to the reality of the object of perception and the capacity of ideal relations founded upon perception to give us knowledge of the real.

The key-note of this realism is the identification of empirical knowledge with perception, and the formulation of an *ideal* of pure perception, and its immediate evidence, in the light of which our knowledge is tested. Fundamental to the understanding of this definition and ideal of experiential knowledge is the distinction between *a priori* and *a posteriori* knowledge with which the readers of Meinong are familiar. *A priori* necessity applies to judgments of relation, to ideal objects which have being but not necessarily existence. Perception, which alone is experience, properly speaking, has immediate evidence of certainty (or conjectural [*Vermutungs-*] evidence which approaches to certainty) but not necessity. Perception, whether inner or outer, always includes judgment of existence. The criterion of perception is, then, not the representative correspondence of presentation with object, nor the causal relation between object and presentation, but the immediate evidence of the existential judgment.

Fundamental again to this definition and ideal are the well-known distinctions between the *presentation*, the *object*, and the *objective* in perception, between the content and intent of perception. The object of perception is always a real, not an attribute; the objective is always existence. The immediate evidence which characterizes perception does not apply to

the presentation, to the attribute, but to the existence of the object apprehended by it. The ideal of pure perception is simultaneity of act and object of perception, *i. e.*, absolute immediacy to which alone certainty attaches.

All this is in the main a recapitulation of Meinong's former analyses of knowledge. But when the criterion and ideal of perception are applied to our concrete knowledge — and this is the new feature of the work — it is found that many *apparent* perceptions, 'aspects' of both inner and outer experience, do not satisfy them. They are what Meinong describes as only half-perceptions. There is a perceptual substrate, an existential judgment with its immediate evidence, but to this are added subjective, phenomenal aspects, sensational and ideal, which do not have immediate evidence and must frequently be supplanted by 'better' phenomena. Such half-perceptions are the so-called primary and secondary qualities of outer perception, both of which are subjective and without immediate evidence.

Immediate evidence of certainty, with its ideal of simultaneity of object and act of perception, is realized only in inner perception and there only approximately. In the inner perception of such psychical objects as the presentation-content involved in perception of external objects, or the fundamental psychical acts of presentation, feeling, conation, and judgment, the normal relation is that of succession of object and perceptual act. There is an ideal point or moment of togetherness, with its immediate certainty, but most of the aspects of inner perception are phenomenal content with only conjectural (*Vermutungs-*) evidence. Meinong's discussion of the relation of immediate perception to memory, the immediate evidence of the former and the conjectural evidence of the latter, is very interesting at this point. A statement of his conclusion must suffice. "The evidence of inner perception is, like that of memory, merely conjectural, and reaches the ideal limit of certainty only at the limiting moment of immediacy."

While the aspects of inner perception have a peculiar advantage in the matter of evidence, the situation in the case of outer perception is in principle the same. There is an outer as well as an inner perception. It offers very good conjectural evidence for the existence of things, but poor evidence for the existence of the appearing attributes. Both primary and secondary qualities frequently turn out to be illusions without evidence, phenomenal aspects for which 'better' phenomena must be substituted.

It is at this point that the most suggestive feature of the present work appears in the theory of the substitution of ideal objects, ideal constructions, ideal *superiora* (which apart from perception have being and necessity but not existence and certainty), as phenomena of a higher order for the lower phenomena without evidence. Meinong maintains that we have knowledge of reality through ideal *superiora*, that they are applicable to the noumenon. In other words, that the subjective origin (through ideational activity) of the relational elements in knowledge does not affect

their validity as vehicles of perception of the real. It is difficult to state in a word or two the elaborate reasoning which underlies this claim, but its general trend may be suggested. Ideal relations, when applied to the real, have perceptual evidence, are *quasi* perceptual, as are the other phenomenal aspects of perception. Thus, to take the most important ideal *superiora*, relations of similarity and difference, when a perceptual judgment includes the perception of difference, the same evidence of existence of an object holds of the judgment of existence of differences in the object. The differences are real although the particular phenomena in which these differences appear may turn out to be illusory and require the substitution of other phenomena. The possibility of the transference of these ideal relations (and besides similarity and difference Meinong includes number, form, movement, and cause and effect, closely connected with judgments of comparison) from one phenomenal aspect to another proves that they belong to the noumenal and have existence as their objective.

The essential task of every empirical science is, then, the discovery of the *best* phenomena as substitutes for the first aspects of perception; and phenomena are the 'better,' the more differentiated they are, *i. e.*, the more they further the relational judgments involved in perception. In the introduction of this worth concept of 'better and worse' phenomena, of degrees of reality, Meinong is apparently on the verge of a functional and developmental theory of knowledge, an aspect which he has always tended to ignore and which is only suggested here. The theory of evidence developed makes immediate evidence of the noumenal but an ideal limiting term. Practically all perceptions of concrete aspects of experience, whether inner or outer, have only probability, and the degree of their probability seems to be measured by their instrumental value in furthering the recurrent conceptual activities of comparison. Should not these recurrent activities be viewed in their volitional aspect, and the better or worse evidence of phenomena interpreted in terms of continuity of volitional process? And, finally, as to the nature of immediate evidence which constitutes the ideal of knowledge, has he really got to the bottom of it? His view is far enough removed from the naïve representative and causal theories of knowledge; but is the criterion of simultaneity less external? Meinong denies that we can go beyond this criterion, and criticises all genetic or 'selection' principles of evidence; but it is doubtful whether immediate certainty can be understood any more easily than probability, without the use of the concepts of volition and purpose.

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Questions esthètiques et religieuses. Par PAUL STAPFER. Paris, F. Alcan, 1906.—pp. 208.

This volume comprises three essays. The first, "La question de l'art pour l'art," treats this supposed problem of esthetics both historically and

critically. The views of (1) the classicists of the seventeenth and eighteenth centuries, (2) the poets and critics of the nineteenth century, and (3) the philosophers of the nineteenth century are admirably summarized. The author discusses realism and the relation of art to morality. He holds that "art is free, yet must draw the subject-matter to which it gives form from outside itself" (p. 70). Art is not primarily didactic or moral: "True inspiration is lacking in the artist who marches to two measures, in trying to give his creation at once an esthetic and a didactic form." This does not hinder, however, that "the esthetic value of the subject-matter is in proportion to its moral interest" (p. 72). Of realism M. Stapfer says: "Art is truly a mirror of everything in nature. . . . But ordinary realism is either caricature, preaching, or cynicism; each artist's 'true picture of the real world' is (usually) only a reflection of himself" (p. 86). All admiration is said to involve a moral judgment (p. 89).

The second essay, entitled "Un philosophe religieux du XIX^{e} siècle: Pierre Leroux," is a history and an appreciation of the life and thought of this unique, quasi-philosophical genius. The last essay, "La crise des croyances-chrétiennes," sets forth, in citation and argument, the nature and causes of the decline of religion (primarily in France). The writer's chief aim appears to lie in combating the one-sided fideism of Sabatier and kindred 'philosophers of religion.' M. Stapfer finds the essence of religion in the conflict between impulsive desire and the demands of reason and the mysticism resulting from this conflict. Like the Christian rationalists, M. Stapfer believes 'there must be an eternal basis to morality'; but he does not believe this basis can be found in any known facts or theories. Religion in its chastened form must still combine genuine enthusiasm with a conviction that there is some world principle of which human moral aspirations are a true expression. The writer goes one step farther in believing that esthetic values are likewise an expression of that same principle.

The volume as a whole suffers somewhat from a superfluity of quotations and a slight diffuseness. This is much less a fault in the first essay than in the other two.

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Art et psychologie individuelle. Par LUCIEN ARRÉAT. Paris, F. Alcan, 1906. — pp. 158.

This volume consists of five short essays dealing with personal experiences and observations made upon acquaintances. The aim is "to elucidate or to exercise control over general esthetic theories by means of the particular experiences of individuals" (Preface). No attempt is made to prove or disprove fundamental points of theoretical interest; the book is intentionally a collection of data and nothing more.

The first essay (pp. 1–82) sets forth the author's record of his own mental peculiarities, impressions, and opinions in matters esthetic. In concluding,

M. Arréat defends himself against the charge of having founded esthetics upon perception (pp. 70 ff.). A series of anecdotes is given, illustrating the reënforcement or weakening of esthetic perceptions by associations (pp. 73 ff.).

The second essay is a review of recent works on esthetics (pp. 83–118). The third is again a 'confession' of the kind, origin, and control of imagery in literary creativeness; five short stories and two poems afford the matter for the observations made. M. Arréat explicitly denies every moral purpose in writing these; he states that "morality is a condition of dramatic pleasure, but could not be its immediate end" (p. 122). Attention is also called to the 'schemes of rendition' or 'images of interpretation' which characterize the creative imagination of literary men, giving the latter their 'easy syntax,' 'rhyming power,' 'flow of words,' etc.

The fourth essay is a collection of fifteen cases of persistent and (supposedly) peculiar associations (pp. 133–140). These do not appear to be remarkable as instances, nor yet to have been very well analyzed. The concluding "observations made upon a musical composer" (pp. 141–158) are fairly numerous, but do not appear either exact or extensive enough to serve as more than a simple illustration of general facts already fairly well known. The writer indiscreetly ventures to draw lengthy conclusions from this single case.

The volume contains many illustrations of standard esthetic 'phenomena' which are very well suited to class-room use.

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Elemente der Psychologie des Urteils. Erster Band: Analyse des Urteils. Von ERNST SCHRADER. Leipzig, J. A. Barth, 1905. — pp. viii, 222.

Dr. Schrader has set himself the task of writing a comprehensive treatise on the psychology of the judgment. His introductory volume, *Zur Grundzüge der Psychologie des Urteils*, appeared in 1903; the task is to be concluded by a two-volume work, *Elemente der Psychologie des Urteils*, of which the present book constitutes the opening volume. The book now under review is entitled *Analyse des Urteils;* it proposes to analyze the judgment into its elements, and to show how these enter into combination to form the judgment. The closing volume of the series, *Tendenzen der Urteilsbildung*, will deal with certain general factors which are operative in the formation of judgments but whose presence cannot ordinarily be discovered in isolated instances; among these factors the author enumerates the influence of inherited tendencies, of training, of social environment, and the like.

Dr. Schrader's position is already familiar to readers of his introductiory volume. The present volume is concerned, in the main, with a more detailed working out of the argument there presented. This is done under the following headings: "Introduction," pp. 1–34; "The Empirical In-

vestigation of the Judgment," pp. 35–67; "The Beginnings of the Concept 'False,'" pp. 68–90; "Critically Corrective Thinking," pp. 91–117; "Psychical Activity," pp. 118–147; "Verbal and Non-Verbal Thinking," "Substitution," pp. 148–155; "Subject, Predicate, Copula," pp. 156–200; "Appendices," pp. 201–222.

The author accepts Aristotle's definition of the judgment as that phenomenon of thought in which truth or error is or may be present. He points out that perceptions, memories, and other association-complexes are indifferent to truth and falsity. To mere groups of ideas we may or may not grant assent; and the phenomena of grouping are still identical in the two cases. Judgment is therefore something more than perception and association. And it follows that the psychological principles to which one has recourse in explaining perception and association are inadequate to an explanation of the judgment. It becomes essential, therefore, to introduce another psychological principle; but where is one to find it? Consistency forbids our appeal to a psychical activity, because the psychologist who commits himself to a purely empirical procedure cannot legitimately employ a principle which this procedure fails to reveal or to confirm. The experience of error furnishes a solution of the problem. If every mental process ran its course smoothly and without interruption, if we were never obliged to retrace our steps and correct our initial apprehensions, our mental life would find an analogy in the running of a well-regulated machine. And the laws which explain the mechanical grouping of ideas would explain the whole of the mental life.

But it frequently happens that we find ourselves in error. Having secured new evidence, we criticise and correct our previous apprehensions. An incident to which Schrader makes constant reference will illustrate this procedure. "I see in the distance a person whom I at first take to be a woman. On coming to closer range, however, I observe that the person is pushing a wheel-barrow. Then I perceive that it is not a woman but a workman." The experience of error is itself traceable to the *negative relation* which obtains between the ideas 'woman' and 'pushing a wheel-barrow.' This 'negative relation of ideas' is the *fons et origo* of the judgment. A closer scrutiny of the incident cited reveals to the author two interesting facts. One idea is expelled and permanently excluded from consciousness by another idea; the vanquished idea is dismembered in the struggle, and a portion of it (the colored clothing of the woman) is carried over and incorporated into the victorious idea (workman).

It is to be noted, however, that, on the lower levels of consciousness at least, mature judgment need not be involved in such a process as has been cited. But the germs of the judgment are present; for it is in the 'negative relation of ideas' that we find the origin of the concept 'false,' and the concept 'true' appears as a later product of the same factor. To the 'negative relation,' then, we owe our developed capacity for critical emendation, or critically corrective thought. In the higher stages of develop-

ment, the presence of the essential factor is obscured by the introduction of symbolic mental operations (in accordance with Taine's theory of substitution).

Ideas, then, are to be conceived as arranged in a hierarchy of mutual relationships. They possess the capacity to attract and repel each other in varying degree. When an idea enters consciousness, it is able to expel those which are incompatible with it; it is equally potent to bring to consciousness those for which it has an affinity. Dr. Schrader's theory may be brought into relation with the principle of association. He emphasizes the negative phases of mental grouping, and gives a wholly new aspect to the older theory. That he has been successful in his search for a principle which shall differentiate the judgment from the purely mechanical mental combinations can scarcely be maintained. In the author's conception of the mental life, ideas suppress each other, exclude each other from consciousness, lift their fellows over the threshold, and the like. The whole procedure is described in ultra-Herbartian terms.

In a word, Dr. Schrader finds defects in all of the current theories of the judgment. Those which assume a psychical activity he rejects outright; he would accept a theory of the association type, but only after he has made an important supplementation to the recognized laws of association. The familiar principles of perception and of association can do no more than explain how the raw material is assembled for the judgment. The judgment itself is a product of the 'negative relation of ideas.'

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Critique de la doctrine de Kant. Par CHARLES RENOUVIER. Publié par LOUIS PRAT. Paris, Félix Alcan, 1906. — pp. iv, 440.

In the editor's preface we are told that this work was begun when Renouvier had reached the age of eighty-seven and that it was not quite completed at the venerable philosopher's death. In view of this, the mental energy, acuteness of critical faculty, and power of subtle analysis here shown seem marvellous. The book can stand on its own merits as a philosophical treatise of permanent value, and no allowance need be made by the reader for the shortcomings usually incident to old age. Renouvier's main purpose has been the exposure of the dogmatic element in Kant's philosophy, and especially the illegitimacy of his concept of the *noumenon*, on which depends his doctrine of the real as infinite and unconditioned. It is, of course, nothing new to find this by no means invulnerable side of the Kantian system made the subject of attack; but Renouvier's criticism not only is exceptionally keen-sighted, but is made from an unusual standpoint. For the most part it has been those whose philosophy leaned towards naturalism or positivism who have animadverted upon Kant's juggling with the notion of 'Ding-an-sich,' — using it now as the real cause or substrate of the phenomenal world, now as merely the limiting idea by which human

intelligence recognizes and respects the narrow boundaries of its own cognition. Renouvier makes his attack as an idealist who refuses to accept a metaphysics which, denying reality to the world of our experience and relegating it to the sphere of the unknowable, deprives it of all character and meaning and reduces it to a mere 'vast inane' of which he cannot even predicate existence itself. Similarly, it is as a libertarian that he argues against Kant's doctrine that human freedom can be asserted by virtue of the noumenal nature of the conscious being, — a representation of free will which would exclude its operation from the empirical world of time and space.

It is not possible here to follow out Renouvier's criticism in its details. While in many parts of his subject he has been anticipated by other commentators, in not a few instances he has succeeded in throwing fresh light upon obscure places in the Kantian philosophy, — as, for instance, on Kant's use and misuse of the principle of contradiction, on the deduction of the categories, and on the different meanings attaching to the notion of cause in the various relations in which the word is used. Renouvier's answer to Kant's arguments against the philosophy of Leibniz is worth study, though it is naturally determined by his own preference for pluralism over monism. But, in general, it may be noticed that the vigorous analytical criticism here offered of almost all the main conceptions of Kant's philosophy has a value quite independent of that system of neo-criticism which the author devoted so many years of his life to developing and defending. Helpful though the present work may be to the study of Kant, it offers perhaps a new indication that the time has passed in which thinkers could profitably devote themselves to the task of building up philosophical systems upon the foundations laid in the *Critique of Pure Reason*.

E. RITCHIE.

Da Socrate a Hegel: Nuovi saggi di critica filosofica. Per BERTRANDO SPAVENTA. A cura di GIOVANNI GENTILE. Bari, Gius. Laterza & Figli, 1905. — pp. 430.

The book is a collection of critical essays selected from the contributions of Bertrando Spaventa to various periodicals of his time. The editor is Professor Giovanni Gentile, one of Spaventa's ardent admirers.

To the public outside of Italy a brief biographical account of Spaventa would have constituted a welcome introduction to his writings. As it is, our knowledge of the man, gathered from the book before us, is limited to the following facts: He flourished in the third quarter of the nineteenth century, was an Hegelian, a clear and earnest thinker, an attractive writer, and a valiant opponent of both the political and the spiritual tyranny which the nascent Italian nation was endeavoring to cast off.

The book contains the following essays: (1) "The Doctrine of Socrates," (2) "Thomas Aquinas's Doctrine of Right," (3) "The Life of Giordano Bruno by D. Berti," (4) "Eighteenth Century Sensationalism and Victor

Cousin," (5) "The Practical Philosophy of Kant," (6) "Rosmini's Refutation of Hegel," (7) "Concerning Certain Criticisms [on the preceding essay] by Niccolò Tommaseo," (8) "The Neo-Christian Philosophy and Rationalism in Germany," (9) "Sensationalism in France and the Philosophy of E. Caro," (10) "Italian Amateur Philosophers of the Nineteenth Century," (11) "On Psychopathology in General."

Any one desiring to become acquainted with philosophical movements in Italy during the last century will find this volume a valuable and interesting introduction to the subject. For most of the essays have to do with Italian thinkers; and even those dealing with German and French philosophy reflect the various ways in which these were received in Italy.

In the essay on "The Doctrine of Socrates," Spaventa, criticising a monograph on this subject recently published by Professor Bertini, of Turin, shows that to characterize Socrates in general terms as "representing the principle of conscience and morality," as "the Greek Descartes," or "the Greek Kant," etc., is superficial and inadequate. In this way, one makes of Socrates a naked abstraction. Really to comprehend the man and the historical place and significance of his thought, it is necessary to determine his relation to the concrete Greek life of his time. It is interesting to note that, according to Spaventa, the speculative interest was paramount in Socrates, the ethical interest being subordinate and secondary (p. 22). In the essay on "Thomas Aquinas's Doctrine of Right," the author objects in particular to the failure of the Thomists to recognize what he, as an Hegelian, calls the "objectivity of right" in the state. The article on "Berti's Life of Giordano Bruno" gives vent to the author's detestation of the Inquisition, an institution which Berti handles with too much consideration, he thinks. His glorification of Bruno seems rather extravagant when he says: "To be sure, Berti pronounces him, as a heroic spirit, superior to Socrates; but he has not the courage to say that he was, at least, not inferior to Jesus himself." "Eighteenth Century Sensationalism and Victor Cousin," is a criticism of Cousin's *Philosophie sensualiste au dix-huitième siècle*, which the author finds naïvely superficial. "The Practical Philosophy of Kant," reviewing Jules Barni's translation (with critical introduction) of the *Critique of Practical Reason*, takes occasion to state briefly the significance of Kant's doctrine, frequently dissenting from Barni. We have noted that Spaventa was an Hegelian. When Rosmini, the most eminent Italian philosopher of the nineteenth century, assailed the philosophy of Hegel in his *Logica* as no better than pretentious charlatanism, Spaventa naturally sprang to the defense of Hegel in an article entitled "Hegel Refuted by Rosmini," in which he very effectively exposed the latter's misinterpretations. "Neo-Christian Philosophy and Rationalism in Germany," first published in 1854, is a criticism of Stahl's recently published *Geschichte der Rechtsphilosophie*, which, it seems, sought the basis of political theory in the postulates of the Christian Faith. In "Sensationalism in France and the Philosophy of E. Caro," the author examines the naïve 'spiritual-

ism' which Caro would substitute for French sensationalism, the persistence of which in France is accounted for (according to Caro) by the corrupt state of French society! "Italian Amateur Philosophers of the Nineteenth Century" is a more or less facetious examination of the philosophizing of several laymen of distinction. In the last essay, "On Psychopathology," Spaventa assumes a substantial soul and attempts to make the dependence of psychical changes upon physical changes intelligible on the principles of interaction in general.

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Sociological Papers. By FRANCIS GALTON, E. WESTERMARCK, P. GEDDES, E. DURKHEIM, HAROLD H. MANN, and V. V. BRANFORD. London, Macmillan & Co., 1905. — pp. xviii, 292.

This volume is the first publication of the recently organized Sociological Society in Great Britain. It is a collection of miscellaneous material, consisting for the most part of papers or abstracts of papers read at the meetings of the society, together with the discussions, written communications, and pertinent press comments called forth by the papers. The editors have endeavored to impress upon the contents of the volume some sort of unity by suggesting that the discussions may perhaps be grouped under three main heads as follows: (1) "The History and Methodology of Sociology," — represented by papers "On the Origin and Use of the Word Sociology," by Mr. V. V. Branford, "On the Relation of Sociology to the Social Sciences and to Philosophy," by Professor E. Durkheim and by Mr. Branford, and on "Sociology and the Social Sciences," by Professor Durkheim and M. E. Fauconnet; (2) "Pioneer Researches in Borderland Problems," — represented by papers on "The Position of Woman in Early Civilization," by Dr. E. Westermarck, and on "Life in an Agricultural Village in England," by Mr. Harold H. Mann; (3) "Applied Sociology," — represented by papers on "Eugenics: Its Definition, Scope, and Aims," by Francis Galton, and on "Civics: As Applied Sociology," by Professor Patrick Geddes.

As a whole, this book is perhaps expository and illustrative of the Nature and Method of Sociology. In regard to the central subjects, however, it presents no distinct and consistent point of view. The most that can be said in this connection is that throughout the leading papers there run certain persistent undertones. Among these may be distinguished: (1) a general admission of the relative backwardness in England of frank recognition of sociology as a science and of provision and support for sociological investigation and teaching recognized as such; (2) the expression of the need for conscious coöperative effort among the students of the various sociological specialisms; (3) the conception of sociology as a science with a three-fold purpose, — the presentation of a scientific account of the social facts of the present, an explanation of the social present in terms of genesis

and process, and a forecast of the future; (4) a voicing of the notion that one of the main purposes of sociological study is to furnish adequate guidance for social ameliorative effort.

The heterogeneous and somewhat informal contents of this volume do not prevent it from being a contribution of distinct worth to sociological literature. The student of applied sociology will find the paper by Professor Geddes on "Civics," and that by Mr. Mann on "Life in an Agricultural Village," to be especially suggestive and stimulating. On the whole, however, the most valuable portion of the work probably consists in the discussions and written communications in connection with the papers on the Value and Method of Sociology. Here the student will find the quintessence of the thought regarding these fundamental questions of many eminent specialists in many lines of research. It would be interesting, did not the limits of this notice forbid, to contrast the diverse opinions expressed by such authorities as Paul Barth, Marcel Bernes, James Bryce, Professor Cosentini, Alfred Fouillée, Professor Koralerski, Achille Loria, J. S. Nicholson, Professor Sorley, Dr. S. R. Steinmetz, Dr. René Worms, and many others of equal rank who contribute to the discussions. The mere mention, however, of these names is sufficient to indicate the wealth of suggestive thought which is here placed before the student of sociology.

It is to be regretted that a book which in so many respects is praiseworthy should suffer for an unnecessary lack of coherence in the arrangement of its contents and from careless proof-reading.

R. F. HOXIE.

Socialistes et sociologues. Par J. BOURDEAU. Paris, Félix Alcan, 1905.—pp. 196.

The single purpose of this book seems to be to show the errors and weaknesses, theoretical, practical, and personal, of the socialists. Superficially the volume has the appearance of a scientific work, though hardly a systematic one. As the discussion goes forward under the main heads, "Questions de sociologie," "Théoriciens socialistes" and "Le socialisme en action," it is the natural supposition of the reader that the author intends to offer a criticism of socialistic theory on the basis of a study of sociological fundamentals. This apparently is M. Bourdeau's aim, but it is hardly realized. As a matter of fact the book consists of a series of practically disconnected essays, in the main popular and polemical though not altogether unscientific.

The author's positive view-point as expressed in the volume is sufficiently indicated by the following quotations:

"A travers l'histoire, comme à travers l'histoire naturelle, les individus et les groupes, les classes sociales comme les espèces animales, se trouvent en lutte, en concurrence perpétuelle; chaque groupe, chaque classe est menée par une élite, . . . qui comprende les mieux adaptés, les plus éner-

giques et les plus habiles, et tire à elle le profit principal. . . . Ce combat éternel qui a créé la civilisation . . . . varie en degrè, en intensité, en complexité, mais ne s'arrête pas un seul instant, et nous ne pouvons prévoir qu'il cessera dans l'avenir, étant donné la stabilité du caractère humain. Les groupes les plus forts opprimeront toujours les groupes les plus faibles, s'ils sont incapable de se défendre, de tenir leur adversaires en respect, et le mond idéal de justice et de paix ne convient qu' à' un inscription de cimetière" (p. 145). "Sacrifier l'élite à la foule serait un crime de lèse humanité" (p. 72).

Armed with these notions M. Bourdeau has little difficulty in proving socialism to be the false dreams and tyrannical theories of inconsistent malcontents.

The volume is perhaps worth reading by those who have neither the time nor patience for serious study of the matter concerned.

R. F. HOXIE.

A Text-Book of Sociology. By JAMES QUAYLE DEALEY and FRANK LESTER WARD. New York, The Macmillan Co., 1905. — pp. XXV, 326.

This book "is based fundamentally on *Pure Sociology*" and contains "in epitome the essential elements" of Dr. Ward's sociological system. As such it aims to give "a clear and concise statement of the field of sociology, its scientific basis, its principles as far as these are at present known, and its purpose."

The authors of this work conceive of sociology as the synthesis of all the special social sciences, which thus constitute merely its data. Thus conceived, sociology is to them a true science, — a domain of force whose specific manifestations can be isolated and named, and whose operations under manifold conditions can be reduced to definite laws. The study of this science appeals to them as a study of social forces in action. The emphasis in this work, therefore, is on the genetic and functional rather than on the morphological aspect of social phenomena. Hence, aside from an introductory discussion of data, method, etc., it consists of a study of the origin, classification, nature, and action of social forces in the development of society.

An essential feature of the book is its emphasis on the idea that social development tends more and more to become conscious and teleological, and therefore on the practical value of the study of sociology. The work finds its justification "in the desire to present in simple and popular form, those scientific principles that must ultimately be used as guides for collective activity."

The treatment throughout the book is altogether constructive and non-controversial. The style is very clear and attractive, considering the character of the work. A well-selected bibliography follows the table of contents.

R. F. HOXIE.

The Philosophy of F. H. Jacobi. By ALEXANDER W. CRAWFORD. Cornell Studies in Philosophy, No. 6. New York, The Macmillan Co., 1905. — pp. 90.

Professor Crawford has given us a painstaking and appreciative account of Jacobi's philosophy. The first chapter presents a succinct review of his life and writings, and the four succeeding chapters take up respectively his standpoint and problem, the doctrine of immediacy, his realism or doctrine of actuality, and his metaphysics, theism, and philosophy of religion. On one point the author takes issue with Professor Wilde in his *F. H. Jacobi: A Study in the Origin of German Realism.* "It has been said that Jacobi is a realist, and his philosophy has been characterized as the origin of German realism. But he is at any rate not a materialistic realist; for, as we have just seen, he is a strict theist, believing also that man's nature is essentially spiritual. His language, moreover, is usually the language of realism, but we find it easier to interpret his thought as a groping and imperfect idealism. We have seen reason to regard him as having closer affiliations with the idealists than with the realists, for his thought is, that spirit is the final term of the universe, and that all things have their being only in the Absolute who is spirit, and not substance. It is this conception, then, that leads us to call him an imperfect idealist, and his philosophy one of the springs of German Idealism" (page 86).

An error may be noted in the date given for the publication of Jacobi's *David Hume über den Glauben.* The reference to the work on page 4 would seem to imply that it was published after the second edition of the work on Spinoza, which appeared in 1789. In the bibliography, page 87, the work is dated 1785. The correct date is 1787. Bibliography and index are valuable additions to this scholarly study.

Professor Crawford has confined himself strictly to historical exposition. It would be interesting to have had a discussion of the relation of Jacobi's Faith-Philosophy to certain present-day tendencies of thought. A rough parallel might be drawn between the prevailing types of philosophy a century ago and those of to-day. Modern agnosticism and positivism are like the English and French empiricism of the eighteenth century, at any rate in the denial of all knowledge of the supersensible; modern idealism not only shows the same spirit but is the actual historical descendant of the Kanto-Fichtian movement; and have we not in Balfour's doctrine of faith as the foundation of all belief, scientific, philosophic, and religious, and perhaps in pragmatism, with its faith in will rather than in intellect, modern analogues of the faith philosophy of Herder and Jacobi? F. C. FRENCH.

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The following books also have been received:

The History of English Rationalism in the Nineteenth Century. By ALFRED WILLIAM BENN. 2 vols. New York and Bombay, Longmans, Green, & Co., 1906. — pp. xxviii, 450; xii, 533. 21s.

Thought and Things: A Study of the Development and Meaning of Thought, or Genetic Logic. Vol. I: Functional Logic, or Genetic Theory of Knowledge. By JAMES MARK BALDWIN. London, Swan Sonnenschein & Co.; New York, The Macmillan Co., 1906. — pp. xiv, 273. $2.75.

Synthetica: Being Meditations Epistemological and Ontological. By S. S. LAURIE. 2 vols. New York and Bombay, Longmans, Green, & Co., 1906. — pp. xi, 321; x, 416.

Applied Sociology: A Treatise on the Conscious Improvement of Society by Society. By LESTER F. WARD. Boston, New York, Chicago, London, Ginn & Co. — pp. xviii, 364. $2.50.

Essay on the Creative Imagination. By TH. RIBOT. Translated from the French by ALBERT H. N. BARON. Chicago, The Open Court Publishing Co., 1906. — xix, 370.

Space and Geometry in the Light of Physiological, Psychological, and Physical Inquiry. By ERNST MACH. From the German by THOMAS J. MCCORMACK. Chicago, The Open Court Publishing Co., 1906. — pp. 148.

Leib und Seele: Darstellung und Kritik der neueren Theorien des Verhältnisses zwischen physischem und psychischem Dasein. Von RUDOLF EISLER. Leipzig, J. A. Barth, 1906. — pp. vi, 217. Mk. 4.40.

Ciò che è vivo e ciò che è morto della filosofia di Hegel. Per BENEDETTO CROCE. Bari, Gius. Laterza & Figli, 1907. — pp. xvii, 282.

Su la teoria del contratto sociale. Per GIORGIO DEL VECCHIO. Bologna, Nicola Zanichelli, 1906. — pp. 118.

SUMMARIES OF ARTICLES.

[ABBREVIATIONS.—*Am. J. Ps.* = *The American Journal of Psychology*; *A. de Ps.* = *Archives de Psychologie*; *Ar. f. G. Ph.* = *Archiv für Geschichte de. Philosophie*; *Ar. f. sys. Ph.* = *Archiv für systematische Philosophie*; *Br. J. Ps.* = *The British Journal of Psychology*; *Int. J. E.* = *International Journal of Ethics*; *J. of Ph., Psy., and Sci. Meth.* = *The Journal of Philosophy, Psychology, and Scientific Methods*; *J. de Psych.* = *Journal de Psychologie*; *Psych. Bul.* = *Psychological Bulletin*; *Psych. Rev.* = *Psychological Review*; *Rev. de Mèt.* = *Revue de Mètaphysique*; *Rev. Nèo-Sc.* = *Revue Nèo-Scolastique*; *Rev. Ph.* = *Revue Philosophique*; *Rev. de Ph.* = *Revue de Philosophie*; *R. d. Fil.* = *Rivista di Filosofia e Scienze Affini*; *V. f. w. Ph.* = *Vierteljahrsschrift für wissenschaftliche Philosophie*; *Z. f. Ph. u. ph. Kr.* = *Zeitschrift für Philosophie und philosophische Kritik*; *Z. f. Psych. u. Phys.* = *Zeitschrift für Psychologie und Physiologie der Sinnesorgane*. —Other titles are self-explanatory.]

LOGIC AND METAPHYSICS.

Pragmatisme et pragmaticisme. ANDRÉ LALANDE. Rev. Ph., XXXI, 2, pp. 121–146.

This article is a review of some recent publications by the leaders of the pragmatic movement. There is a tendency in philosophy toward dilettantism which causes it to be regarded rather as a literary art or religious faith than as a serious attempt to solve problems in a scientific manner. Revolt against this tendency is a common element in the pragmatism of Peirce and James, and with both it takes the form of a demand for a new standard of metaphysical truth. Both insist on absolute empiricism, the complete homogeneity of scientific and philosophical truth. Accordingly, they do not accept the classical Kantian arguments for the *a priori* character of the causal law, because their doctrine is a realism which finds the universal in the things experienced. As James insists, both the thing and its relations are equally empirical. For pragmatism, thought is primarily a function which enables us to deal with our environment. But this is not its whole definition, for pragmatism accepts as axiomatic the existence of a multiplicity of thinking beings. Peirce, therefore, makes the meaning of the idea of reality to consist essentially in that which puts an end to controversy. As Peirce uses the method, it is opposed to authority quite as much as to rationalism. Pragmatism appears in a great number of forms and this fact has led Peirce to coin the term 'pragmaticism' for his own form of the doctrine. James accepts this indefiniteness as part of the movement; it is not so much a doctrine as a spiritual tendency, which could not, without detriment, be forced into a rigidly consistent form. James uses belief in a more subjective sense than Peirce and gives his thought a decided tendency toward fideism. Schiller, while rightly claiming community with James, goes still farther in the direction of voluntarism both in logic and

metaphysics. He is clearly opposed to Peirce, because he welcomes the existing variety of opinion among thinkers of the pragmatic school. His young Italian followers, the editors of *Leonardo*, who have formed a 'pragmatist club' in Florence, frankly accept pragmatism as a solvent of theories and beliefs, which they regard as purely instrumental. On the other hand, pragmatism has been made use of by apologists for various religious doctrines. Pragmatism seems to have arisen to meet certain weaknesses of intellectualism. The representational theory of knowledge is admittedly dead, and Kant's solution of the problem of knowledge rests on a static conception of the mind quite foreign to present evolutionary modes of thought. In both ethics and logic, indeed, pragmatism may result in a purely individual and anarchical solution of the problems, but this is not necessary. Individual action cannot be the criterion of truth, but collective thought and action may furnish a criterion to the individual. The true may be conceived as an ideal unity toward which our knowledge is directed, a limit not to be foreseen *a priori* but to be progressively realized. Peirce especially seems to base his pragmatism on the subordination of individual to collective thought. This view supports pragmatism upon an intellectual communism, and opens a *via media* between James's sharp antithesis of intellectualism and pure instrumentalism. Besides relating us to our environment, knowledge has also the function of removing the barriers which shut in the individual. Its goal is to correct the fragmentariness of the individual mind and to substitute a unified common thought for a multiplicity of individual opinions.

GEORGE H. SABINE.

The Ambiguity of Truth. F. C. S. SCHILLER. Mind, No. 58, pp. 161–176.

The use of truth is a habit peculiar to man. The true, as the logical norm, is closely analogous to the good and the beautiful. A truth is a proposition envisaged *sub specie veri* (*et falsi*). But since every assertion as such involves a claim to truth, this term becomes ambiguous, referring either to the mere formal claim before verification or to the validated claim which has taken its place in a definite system of knowledge. How shall we distinguish these two? For the formal or intellectualistic logic the problem is hopeless; it can neither be dismissed nor solved. To reach the solution, we must ask how truth is made, how the systematic sciences are actually built up. Now in every science we find a definite subject-matter and method, and the truth of any answer depends on its relevance to the question raised in that science. The nature of the *purpose* pursued in the science will yield the deepest insight into the nature of the science. The objectivity of truth is guaranteed by its social character, and by its subordination to the final purpose, 'the Good.' In all actual knowing the question whether an assertion is true or false is decided by its consequences. A truth is what is useful in building up a science; a falsehood is what is noxious for this same purpose. This is the whole rationale of Pragmatism.

The conception of truth as logical value unifies experience and rationalizes the classification of the normative sciences. The article concludes with a twofold challenge to intellectualist logicians: How do they propose (1) to evaluate a claim to truth, and (2) to discriminate between such a claim and an established truth?

F. D. MITCHELL.

Predetermination and Personal Endeavor. W. R. BOYCE GIBSON. Mind, No. 56, pp. 494–506.

Is the actual itself completely determined, or does the issue depend, in part, at least, on what we strive to make it? Our first answer is likely to to be that knowledge is predetermined, but not volition. Hegel offers an intellectualistic reconciliation of the two, bringing will around to the standpoint of intellect. McTaggart makes neither will nor intellect, but love, ultimate. According to the solution proposed in this article, intellect and will are not opposed; knowledge is rooted in volition, and we are carried beyond contemplation to action, beyond knowledge of objects to knowledge or realization of self. In knowledge of objects we deal with the predetermined or 'given,' though even here the significance of knowledge for *us* is not independent of its pursuit. In self-realization the motive lies not in an already accomplished, static ideal, but in the meaning and value of truth, so far as realized by and organized in us; the profoundest truths are not abstract psychological theories *about* experience, but the concrete truths of social life as they exist *for* experience. To make knowledge 'timeless,' however independent it may be of time-changes, is to render meaningless the notion of development. Failure to make and abide by the distinction between knowledge of self and knowledge of objects is one of the main sources of the current misunderstanding between intellectualists and pragmatists.

F. D. MITCHELL.

Contradiction and Reality. BERNARD BOSANQUET. Mind, No. 57, pp. 1–12.

The purpose of this paper is to insist on negativity as a fundamental characteristic of the real, as against those who, from a psychological view of experience and a confusion of negativity with logical contradiction, regard it as eliminative. Logical contradiction, which consists in the ascription of different predicates to that which has not been fitted to receive them, as unthinkable, plainly cannot be characteristic of ultimate reality. It may be and is, however, not merely subjective, but an objective existent in the world of actual life and fact. Witness the fact of progress in action and cognition. Progress implies its resolution and yet as constantly affirms its existence. It cancels while it maintains itself. Evidently there underlies it something which goes deeper than actuality. This is Hegel's view. For him it is the pulse of the world, a fundamental in all that is real. A view

like McTaggart's, which regards contradiction as a disappearing quantity in the progress of experience, and therefore as non-existent in the Absolute, seems to rest upon a confusion of logical contradiction and negativity. The current view of experience, which endeavors to interpret self-consciousness by reference to actual experience, is doubtless largely responsible. But while logical contradiction is an imperfection which in the progress of experience is as such being constantly eliminated, that which upholds the progress is negativity. It deepens with progress, and must therefore be an essential feature in the completeness of the Infinite. Pain, evil, and error are thus not to be conceived as illusory, but as fundamental to the real. The burden of the finite is inherently a part or rather an instrument of the self-completeness of the infinite.

W. L. BAILEY.

Über die Möglichkeit der Betrachtung von unten und von oben in der Kulturphilosophie (Schluss). H. LESER. Ar. f. sys. Ph., XI, 4, pp. 393–444.

In turning to a critique of the mere treatment 'from below,' it is to be noted first that the mental sciences have developed a relatively independent method in opposition to the natural sciences. Owing, however, to the recent extension of the term 'nature' to include realities of both the corporeal and mental sphere, these mental sciences still come under the treatment 'from below.' But this does not mean that culture does not contain a deeper content of truth in itself extending beyond the realm of nature. Mental life does possess something unique, a realm of original truth and reality which naturalism completely ignores. The connection of mental phenomena by mere association cannot explain the various mental complexes that are met with. Kant, as opposed to the English empiricists, emphasized this in his transcendental logic. For example, the naturalistic treatment recognizes no norms such as are met with in the moral and religious sphere. Further, the naturalistic treatment 'from below' works in a circle by assuming a mental principle which is later resolved into mere appearance. Now, while association undoubtedly plays an important part in the treatment of mental phenomena, it is merely scientific economy that leads one to view such phenomena as entirely explicable by association. Even while mental complexes have for science as such no independent meaning, the question is quite different in the case of philosophical treatment. Mental elements are not purely formal in their nature. Hegel himself did not recognize the full philosophical reality which is here met with. While Kant has been more fortunate, as may be seen in his distinction between the *a priori* and the *a posteriori*, even he is too onesided; the mental powers are not so formal and dependent on experience. In the higher stages especially, they become more and more separated from sensible content and form an independent existence. Here the Kantian distinction of form and content fails; mental processes embrace both. We

may then say that our transcendental *a priori* faculty consists in living functions. Kant unconsciously expressed this in his epistemology, which looked to the functional laws of our reason. Now this *a priori* of course works on experience, but does not arise from it, nor can it act without giving to experience a meaning and connection, and bringing it over into its own sphere. As a consequence of this study, then, we may say that, however much mental life may depend on experience for its development, it is independent, and its various parts and phases are not to be understood 'from below,' but rather from the inner necessity of its own being. It brings experience over into its own sphere and gives it meaning. This is to be particularly noted in the development of culture. Science as such is right in taking the phenomena of personality and the state to be mere fictions, but we must admit and distinguish the philosophical side which treats such phenomena as independent realities. This does not mean that there is a sharp demarcation between 'nature' and 'mind.' These are bound up together, and one finds 'nature' in culture as much as 'mind' outside of it. Again, the empirical limitations of the human mind are necessary; they form the history of mind by making it an endless becoming. Last, the natural sciences, dealing with facts, have a positive method, while the mental sciences, dealing with worth and value, are preëminently normative and teleological.

R. B. WAUGH.

The Crux of Theism. W. H. MALLOCK. Hibbert Journal, III, 3, pp. 478–498.

Let us concede with Romanes (in a posthumous volume lately edited by the Bishop of Birmingham) the existence of intelligent purpose in the universe, and its active presence in every process of nature; let us concede that these processes admit of, even demand, a God; yet they are, we must contend, utterly inconsistent with a God possessing the character which it is the essence of Theism to attribute to Him, a God with fatherly love to the individual soul, the only God who could be an object of religion or interest to mankind. It is strange that Romanes failed to see the impossibility of reconciling the God of the Theist, who in a Christian sense is good, with a God who consciously and deliberately acts through evolutionary processes, producing individuals most of whom are doomed, congenitally or otherwise, to misery and spiritual death. Christianity itself is a type of evolutionary process. The race had grown old before its birth, and even now three-fourths of all human beings are without its blessings.

C. WEST.

La proposition et le syllogisme. J. LACHELIER. Rev. de Mét., XIV, 2, pp. 135–164.

This article is a study of propositions and syllogisms. It is divided into three sections. The first section, which is devoted to the division and sub-

division of propositions, finds that there are two general classes: propositions of inherence and propositions of relation. The latter of these may, the author maintains, be used in a syllogism, which, however, is quite different from that of the Aristotelian logic. The former class he subdivides into five species, viz., singular, collective determinate, collective indeterminate, universal, and particular. The next section, which deals with the first three figures of the syllogism in the light of the above division and subdivision of propositions, points out that there are really ten modes in both the first and the second figures of the Aristotelian syllogism, while in the third figure fourteen modes are possible. In the case of the first and second figures, the author argues, the premisses are susceptible, from the point of view of quality, of two, and, from the point of view of quantity, of five forms; in the case of the third figure seven forms, from the point of view of quantity, are possible. The traditional modes of these figures the author explains to be a result of the failure of logicians to recognize his several kinds of propositions. The third section of the article is devoted to a practical application and confirmation of the above theory.

G. W. CUNNINGHAM.

Quality and Quantity. JOHANNES GROS. The Monist, XV, 3, pp. 361–375.

The dualism of self and non-self was established by accepting sensations as qualities of things apart from self. But the examination of sensation proves that sensation can give only what it implies, *i. e.*, a state of consciousness, and not the quality of a thing. A series of psychical states is all that sensation can give, unless we suppose a spontaneous postulate by thought of otherness, a psychological mystery. But we have a right to take into account all the creations of philosophic reflection. And in order to regard itself as a series of states of consciousness, thought must have something upon which to record these states. But it has no right to infer that, therefore, sensations are qualities of that something. We only attribute qualities to objects by a sort of illusion. The human mind knows only number adequately, can only clearly grasp what can be reduced to a ratio. Therefore quality, to be intelligible, must be reducible to quantity; and the progress of knowledge will be proportional to the substitution of mathmetical formula for intensive fact. This is the ideal of physics, to show that sensations, though qualities in ourselves, are externally modifications of motion, the reduction of quality to quantity. And by this reduction of a confused state to a clear idea, we manage adequately to grasp the real,—adequately, but in relation to our way of knowing. Quality considered as an inner state will always remain out of reach. The psychological inner self escapes any fixed determination, since it varies according to individual temperament. If, then, we may be said to mutilate things by setting them in mathematical formulas, we simply affirm that only so set are they

intelligible. Quality is objectively an illusion founded on reason, expressing the relation between objects and ourselves; it is subjectively a sensation whose certainty lies in our own psychical existence, the more or less confused feeling of something good or evil for our organism. Quantity is the irreducible point of view of thought in its effort to reflect and classify the world.

C. WEST.

The Nature of Consistency. G. A. TAWNEY. J. of Ph., Psy., and Sci. Meth., III, 5, pp. 113–123.

Consistency is an immediate sense of self-maintenance in activities; it is identity, though not mere abstract identity. Reality is probably simply consistent experience, continuous, self-maintaining. In actual experience, consistency results in a feeling of satisfaction. It is analogous to accommodation and habit, and partakes of the nature of both; but it differs from them in being conscious and reflective, free, purposeful, and self-determined. It is also akin to assimilation, but superior to it. The self maintained by consistency is the self of socially significant activities. Consistency is a matter of value rather than a matter of fact, and all values are social.

MATTIE ALEXANDER MARTIN.

Genèse des premiers principes. L. BAILLE. Rev. de Ph., VI, 2, pp. 166–178.

A genetic study of the principle of contradiction is requisite in order to vindicate its priority and objectivity. According to psychological evidence, intellectual knowledge takes its origin in the most general ideas, each of which constitutes the germ of an analytic judgment, the judgment of definition. The most extended and least determinate, and hence the earliest, of our concepts is that of being in the concrete (*ens*). The most general of perfections by which it manifests itself to intelligence is being (*esse*). Hence the first judgment must be the affirmation *ens est*, with its implicit rejection of the predicate of non-being. This rudimentary form of the first principle, which is at the root of all our judgments, is not a mere tautology, for in it the idea of being first comes to its full value, and the necessary union of intelligence and reality is effected. This first judgment is not an act of 'consciousness,' as relativism insists, but rather the establishment of the objectivity which must precede such consciousness. The misconception of this judgment as purely analytical has arisen out of a failure to recognize the concrete character of the subject, and from the erroneous conviction that thought being exists essentially and necessarily. Since the affirmation of the capacity for existence of a thought being suffices to distinguish it not merely from a purely subjective idea but also from simple nothingness, the principle next assumes the hypothetical form: If a being is, its existence excludes non-existence; the same being cannot at

the same time be and not be. At this stage of development the judgment manifests at once the essentially objective character of knowledge, and the two fundamental properties of intelligence, truth and unity. A third and more complex formulation follows. In the words of Renouvier: "The same subject cannot admit a definite qualification, and, at the same time and in the same connection, its contradictory opposite." This represents a universalization of the preceding formula. The analytic and objective character of the principle of causality may be vindicated on these same lines. For the original concrete idea of being is given as relative, in so far as the first judgment developing out of it implies its inability to actualize itself. Since the relative implies the non-relative, the mind is forced to distinguish between the actualized power and its source, thus passing from the principle of contradiction into that of causality. Hence the latter also has its root not in an immanent law of reason, but in the constitution of reality itself.

ELSIE MURRAY.

Consciousness and its Object. F. ARNOLD. Psych. Rev., XII, 4, pp. 222–249.

The problem is to examine how far it is possible to have direct awareness of consciousness, what is meant by a mental state, and to search for a formula with which one may work in dealing with object, reality, or consciousness. (1) Direct awareness of consciousness is impossible, for introspection deals with a present object. Even in dealing with a duration-block of consciousness, we are concerned with a present object; for it is impossible to introspect either a past mental state or self-activity. In emotion, too, the same truth is evident. Emotion, as defined by the James-Lange theory, is simply consciousness of our body in a peculiar way. (2) By an object of consciousness is meant simply what affects one at any moment, *e. g.*, a piece of paper, or one's own body. But in the so-called higher forms of mental activity consciousness seems to deal with images, with words and their meaning, and with relations. However, images are only the effect of something that formerly influenced consciousness. So, too, words and word-images are simply a number of impressions, while their significance is constituted by certain bodily attitudes connected with the words and so with actual objects. Finally, the relational consciousness is only consciousness of a body in a special manner. (3) But consciousness is known to us only in relation to something else, and is implied in the object. In fact the object is equivalent to consciousness in relation to the real. Consciousness and reality are abstractions from the object. The immediate object is all we have; reality, which we can never know, is in some way bound up with another reality, the self or consciousness.

G. W. CUNNINGHAM.

PSYCHOLOGY.

La conscience. PAUL HERMANT. Rev. de Ph., V, 11, pp. 495–511.

In the discussion of consciousness, it is necessary to distinguish conscious and unconscious phenomena. Leibniz distinguishes two kinds of unconscious phenomena: (1) excitations which are 'below the threshold'; (2) states unconscious as a result of habit. H's table of unconscious phenomena is as follows: (1) very feeble modifications of mental states, (2) habitual phenomena, (3) points intermediate between two conscious facts, (4) phenomena without reaction upon the whole self, (5) habitual composites of a very abstract state of mind. Some characteristics of consciousness, on the other hand, are: (1) attention (normal), (2) volition, (3) traces left in memory (in opposition to hypnotic states, etc.), (4) pleasure or pain. We can say that the state of consciousness responds to the psychic life of the being himself, to his individual evolution, to his growth or retrogression. In the last analysis, consciousness is a phenomenon of association between a new image and the whole of a former acquisition; an acquired representation grows unconscious in so far as it undergoes very slight modifications. Around the automative actions are grouped those which, through habit, become less and less prominent in consciousness. Consciousness is the evolution of oneself, the realization of a new equilibrium. Consciousness and unconsciousness do not form in our personality two separate and independent domains; our mental life is a unity, the different elements of which are in intimate relation.

MATTIE ALEXANDER MARTIN.

L'effort. B. BOURDON. Rev. Ph., XXXI, 1, pp. 11–14.

As to the definition of the term 'effort,' thinkers are not agreed. For the physiologist it is a very precise conception. But eventually the physiologist reduces his definition to terms of that of the psychologist, for whom, as for common sense, effort is intense muscular contraction. Here, however, arises the difficulty of determining the degree of intensity necessary for effort. So we have to say effort is muscular contraction, weak as well as intense, or even the tendency toward contraction. As to the perception of effort, it would seem that the sensations come from the muscles. However, Goldscheider opposes this theory and holds that the tendons are the proper organs of perception. But his distinction between the sensation of effort and sensation of resistance seems to be unwarranted, the latter resolving itself into a sensation of pressure *plus* a sensation of effort. In the emotions this phenomenon of effort is found. So, also, in the moral and intellectual spheres there is no such thing as purely moral or mental effort; there are often real sensations and always representations of muscular effort. Concerning the part effort plays in distinguishing the self from the external world, there is much difference of opinion. It would seem

however, that neither effort alone nor effort associated with the sensation of pressure can give us the notion of objectivity.

G. W. CUNNINGHAM.

L'ironie : étude psychologique. GEORGES PALANTE. Rev. Ph., XXXI, 2, pp. 147–163.

Though belonging to both individual and social psychology, irony is in origin individualistic. It is one of the principal attitudes possible to the individual before society ; it is here that it is interesting to the social psychologist. The generating principle of irony seems to be a sort of dualism which can take different forms and give rise to diverse antinomies. Laughter and irony have the same source,— an unexpected incompatibility between our preconceived idea of a thing and the real aspect suddenly shown us. Schopenhauer shows that what makes the gaiety of laughter is the revenge of intuition upon abstract thought. But why is laughter gay and irony often sad or bitter ? Schopenhauer's explanation is incomplete here. P. holds that it is due to this same *defeat* of our reason, which, when serious, becomes disquieting ; the defeat of reason is the defeat of ourselves. The most frequent source of irony is probably the dissociation in the mind between intelligence and sensibility. Irony is the passionate daughter of sorrow, but is also the proud daughter of cold intelligence. Again, the conflict between different passions engenders irony. This is shown in the theme furnished by the battle waged between the instinct of sociability and that of egotism, irony differs from cynicism in that the latter is a transcendent egotism, whereas the former treats itself as one among many ; cynicism presupposes a lack of nobleness of soul, irony presupposes an intelligence fine and subtle. To sum up the psychological characteristics of irony : it is pessimistic ; being essentially intellectual, it is aristocratic and romantic. It is a characteristic trait of art and romantic thought ; it represents the essentially æsthetic attitude, the antithesis to the rationalistic attitude. Irony, though held in abomination by dogmatic minds, has a function as a counter-balance to social and moral dogmatism, evangelism, and moralism.

MATTIE ALEXANDER MARTIN.

Sur les abstraits émotionnels. L. DUGAS. Rev. Ph., XXX, 11, pp. 472–486.

Not only is there, as Ribot has shown, an affective as well as an intellective abstraction, but the general idea originates in feeling. If there is, however, a process of abstraction common to feeling and thought, it is not that of fusion. Galton's general idea cannot explain itself without feeling, much less explain the abstraction of feeling. Such a general idea as beauty is explicable only on the basis of a certain *rapport* between our nature and the various things which please us ; not on a fusion of images. Indeed, generalization is never a mechanical operation ; the law of affinity among

images must be sought in the feelings. Generalization means not merely to collect but to comprehend. A general idea is a point of view, and an interest originates and develops it. But not only is the general idea based on feeling, the emotions themselves can be generalized. The passions of avarice and love may be called abstract in that they apparently subsist independent of cause and condition. Feelings have an internal source and develop in both advantageous and disadvantageous circumstances. We generalize the passion of love when we recognize it as the same through all of its forms and phases. But the unity of this generalization lies in a common law binding diverse phenomena, not in community of characteristics between diverse phenomena. C. WEST.

La haine : étude psychologique. E. TARDIEU. Rev. Ph., XXX, 12, pp. 625–635.

Hatred proceeds from an instinct of self preservation, and is the weapon of the egoist. Disparity of thought engenders hatred. Women more than men are its victims ; it is a sign of weakness. Sometimes it springs from physical antipathy, sometimes from mental and moral degeneracy. Its manifestations are frequent, but especially noticeable in the state of love, and in those of wedded and family life. Social hatreds arise chiefly from social inequalities. Though hatred is not to be commended, it has its value. Certainly it is sometimes a stimulant to talent, and a weapon in the hand of the ambitious. And if the hatred of foreigners conduces to the love of one's countrymen, one does well to defend it.

C. WEST.

ETHICS AND ÆSTHETICS.

La religion du doute. G. PRÉVOST. Rev. Ph., XXXI, 1, pp. 41–62.

Doubt is to be condemned only when it lulls us to sleep, for then it is synonymous with stagnation. In itself, however, it is the instrument of progress ; conscientious doubt, active and not resigned, is a veritable religion. Certitude concerning man's destiny would be fatal to him ; yet he seems justified in believing that the gradation, everywhere evident to him, is equally applicable to those beings who, included in the infinite, have neither beginning nor end. God, for man, is essentially the Unknowable, although we do have the idea of infinity of which the idea of God has been said to be a 'form.' It is better to doubt than to attribute to God human qualities ; and this we do when we speak of him without limiting ourselves to the affirmation of his existence. Concerning our destiny, moreover, the word *néant* has no significance. From the point of view of being, there are transformations, but life is continuous. To begin and to end imply an interruption of life, hence there is no beginning and no end. Matter is never destroyed ; only its form is modified. And why may not conscious force, constituting the individual, obey just as any other

force the universal law of transformation? Why may not this transformation be viewed as a gradation toward the infinite such as we see in every visible extension? Finally, even in reserving a place for doubt concerning the nature of these transformations, one can, by accepting this gradation toward the infinite, not only explain the evolution of all living beings, but also construct a very practical and very elevated morality with a sanction adequate to our sentiment of justice.

G. W. CUNNINGHAM.

Ein Beitrag zur Erkenntnis der sozialwissenschaftlichen Bedeutung des Bedürfnisses. SIEGFRIED KRAUS. V. f. w. Ph., XXX, 1, pp. 1–39.

Social science has for its object human activities directed to the satisfaction of economic and other needs arising from life in society. The basal factors in these are the individual subject and the environment. On which the emphasis is to be laid, or in which the moving principle sought, is the fundamental problem. The essay falls into two main parts: A critical part directed against the so-called materialistic interpretation of social phenomena, Karl Marx being taken as typical; and a positive part, being an inquiry into the general nature and causal basis of needs. From these opens up the wider problem of a system of needs. The basis of the materialistic interpretation is the fact of the essential relation of man to a material environment. To live, he must master it; he does this by tools; development, then, means better tools. Since all spiritual phenomena of society, as, *e. g.*, religion, art, etc., are dependent on the economic status of that society, the development in productive means indicates development here also; *e. g.*, economic status and political revolution in France. The materialistic interpretation, of course, lays emphasis on the economic factor as primal. Its plausibility rests on an uncritical causal concept and loose ideas of the individual and environment. A parallelism, such as it points to, does not indicate a causal priority of the material or economic. Kraus then deals with the nature and conditions of a need as such. In so far as needs are regarded as the causes of human activities, want (*Begehren*) and feeling (*Fühlen*) must be their constitutive elements. The unity of the individual imposes upon them a form-element giving unity and definiteness. All that is most fundamental in a need thus belongs to the individual subject. The environmental element may be and indeed is prior in time, but not logically. The system of needs is not merely a temporal one, but genetic and dialectical, and the formal or culture element is the independent, organizing, and directive variable in it.

W. L. BAILEY.

Le rôle social de l'art. P. GAULTIER. Rev. Ph., XXXI, 4, pp. 391–409.

A work of art is social, in the first place, in its constitution. It is a synthesis; for every work of art truly worthy the name is the product of the collaboration of the artist with the beings or the things which the work

represents. It is social, in the second place, in its origin. The artist's greatest productions picture the times in which he lives; he is held, at least implicitly, by bonds of sentiment or of imitation to his time, his country, his neighborhood. The more original an artist, the more fully can he reflect the spirit of his time. Again, a work of art is social in its effects; first, on the individual, and second, on the social whole. It takes the individual out of himself and brings him into sympathy with the author, his subject, and his surroundings; it teaches him a wider tolerance by enlisting his sympathy with that which is new and different. Again, the fact that it arouses in individuals of a group much the same sentiments serves to unify them; it takes hold of the common elements in their enthusiasm and itself becomes a common ideal. It unites by emphasizing common sentiments and by suppressing distinctions. A work of art is social because it is beautiful, because it appeals to the æsthetic emotion. The real artist differs from the dilettante in his ability to appeal to this emotion. There is a certain solidarity existing between beauty of works of art and their social character. On the other hand, in spite of their beauty, works of art may become anti-social in arousing emotions destructive to the social organization. They then serve an end radically opposed, not only to progress, but to society itself. Finally, the artist himself, if he be great, must be a man of his time and of all time, a man to whom nothing living is foreign.

MATTIE ALEXANDER MARTIN.

NOTES.

Associate Professor Alexander Meikeljohn, Dean of Brown University, has been made Professor of Logic and Metaphysics.

Dr. Frederick Tracy, Lecturer in Philosophy in the University of Toronto, has been appointed Associate-Professor of Philosophy in the same institution, the appointment to date from July 1, 1906. Mr. W. G. Smith and Dr. T. R. Robinson have been added to the staff as lecturers in philosophy.

Dr. W. K. Wright, of the University of Chicago, has been appointed Instructor in Philosophy and Psychology at the University of Texas, to succeed Dr. Warner Fite, who has been made Adjunct Professor of Philosophy at the University of Indiana.

Dr. Percy Hughes, of the University of Minnesota, is filling the chair of philosophy at Tulane University during the absence of Professor W. B. Smith, who will spend the coming year in Europe.

The Open Court Publishing Company has added to its series of Philosophical Classics a reprint of William Smith's translation of Fichte's *Vocation of Man*, with an introduction by Dr. E. Ritchie. The same firm reissues the reprint of Hume's *Enquiry concerning Human Understanding*, supplemented in this new edition by selections from Book I of Hume's earlier and completer work, the *Treatise on Human Nature*. The added sections are (1) the first, second, third, and fourteenth of Part III, which enlarge the teaching of the *Enquiry* concerning causality; and (2) Section VI of Part I, "Of Modes and Substances"; Section VI of Part II, "Of the Idea of Existence and of External Existence"; and Sections II and VI of Part IV, which include the important part of Hume's teaching about the existence of body and the 'idea of self.' The Open Court Publishing Company has also in press a revision of its edition of Locke's *Essay* (Books II and IV, in part). This issue will be prefixed by a reprint of the translation, published in 1706, of Leclerc's *Life of Locke* (1705). This intimate and appreciative biography by Locke's personal friend, is not elsewhere readily accessible.

We give below a list of the articles, etc., in the current philosophical journals:

THE PSYCHOLOGICAL REVIEW, XIII, 5: *Felix Arnold*, The Psychology of Interest, II; *F. Kuhlmann*, On the Analysis of the Memory Consciousness; *S. F. MacLennan*, Organization in Psychology.

THE PSYCHOLOGICAL BULLETIN, III, 8: *J. W. Baird*, The Contraction of the Color Zones in Hysteria and Neurasthenia; *Adolf Meyer*, The Relation of Emotional and Intellectual Functions in Paranoia and Obsessions; Psychological Literature; Books Received, Notes and News.

III, 9: *Percy Hughes*, The Term Ego and the Term Self; Psychological Literature; Books Received; Notes and News.

THE BRITISH JOURNAL OF PSYCHOLOGY, II, 1: *G. F. Stout*, The Nature of Conation and Mental Activity; *W. G. Smith*, A Study of Some Correlations of the Müller-Lyer Visual Illusion and Allied Phenomena; *W. H. Winch*, Immediate Memory in School Children, II: Auditory; *Beatrice Edgell* and *W. Legge Symes*, The Wheatstone-Hipp Chronoscope; *C. Spearman*, 'Footrule' for Measuring Correlation; Proceedings of the Psychological Society.

THE JOURNAL OF PHILOSOPHY, PSYCHOLOGY, AND SCIENTIFIC METHODS, III, 17: *M. Phillips Mason*, Reality as Possible Experience; *G. A. Tawney*, Two Types of Consistency; *Lucinda Pearl Boggs*, The Relation of Feeling and Interest; *E. A. Norris*, Feeling; Reviews and Abstracts of Literature; Journals and New Books; Notes and News.

III, 18: *F. C. S. Schiller*, Idealism and the Dissociation of Personality; *Arthur Ernest Davies*, The Genesis of Ideals; Reviews and Abstracts of Literature; Journals and New Books; Notes and News.

III, 19: *Walter B. Pitkin*, The Relation Between the Act and the Object of Belief; *E. A. Norris*, Self as a Developed Feeling Complex; *A. W. Moore*, The Function of Thought; Reviews and Abstracts of Literature; Journals and New Books; Notes and News.

III, 20: *John E. Boodin*, Space and Reality: I. Ideal or Serial Space; *Wm. J. Newlin*, A New Logical Diagram; *Bernard C. Ewer*, Metaphysics, Science or Art; Reviews and Abstracts of Literature; Notes and News.

VIERTELJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE, XXX, 3: *Georg Wernick*, Der Wirklichkeitsgedanke, II; *Max Frischeisen-Köhler*, Die Lehre von der Subjectivität der Sinnesqualitäten und ihre Gegner; Besprechungen über Schriften; Selbstanzeige; Philosophische und soziologische Zeitschriften; Bibliographie.

ZEITSCHRIFT FÜR PSYCHOLOGIE, XLII, 4 u. 5: *A. Pick*, Rückwirkung, sprachlicher Perseveration auf den Assoziationsvorgang; *G. Heymans* und *E. Wiersma*, Beiträge zur speziellen Psychologie auf Grund der Massenuntersuchung (Schluss); *D. Katz*, Experimentelle Beiträge zur Psychologie des Vergleichs im Gebiete des Zeitsinns; Literaturbericht.

XLII, 6: *H. Cornelius*, Psychologische Prinzipienfragen: I. Psychologie und Erkenntnistheorie; *D. Katz*, Experimentelle Beiträge zur Psychologie des Vergleichs in Gebiete des Zeitsinns (Schluss); Literaturbericht.

REVUE DE PHILOSOPHIE, VI, 9: *E. Mallet*, La philosophie de l'action; *E. Baudin*, La philosophie de la foi chez Newman, III; *F. Mentré*, La philosophie des sciences d'après Cournot; Analyses et comptes rendus; L'enseignement philosophique.

REVUE DE MÉTAPHYSIQUE ET DE MORALE, XIV, 4: *Sully Prudhomme*, Psychologie du libre arbitre; *A. Fouillée*, La doctrine de la vie chez Guyau, son unité et sa portée; *E. Halévy*, Les principes de la distribution des rich-

esses ; *Ch. Andler*, Un système nouveau de socialisme scientifique : M. Otto Effertz ; *M. Winter*, Application de l'algèbre de la logique à une controverse juridique ; Supplement.

XIV, 5 : *B. Russell*, Les paradoxes de la logique ; *Ch. Dunan*, Légitimité de la métaphysique ; *L. Brunschvicg*, Spinoza et ses contemporains ; *A. Mamelet*, L'idée de rythme, par A. Chide ; *G. Lechalas*, Logique et moralisme ; *G. Dwelshauvers*, A propos de l'idée de vie ; Supplement.

JOURNAL DE PSYCHOLOGIE NORMALE ET PATHOLOGIQUE, III, 5 : *W. Bechterew*, La personnalité ; *J. Grasset*, La responsabilité atténuée ; Société de psychologie ; Bibliographie.

REVUE PHILOSOPHIQUE, XXXI, 8 : *F. Le Dantec*, Les objections au monisme ; *Roerich*, L'attention spontanée dans la vie ordinaire et ses applications pratiques ; *A. Chide*, La logique avant les logiciens ; *E. Tassy*, Le sympathique et l'idéation ; Analyses et comptes rendus ; Revue des périodiques étrangers ; Livres nouveaux.

XXXI, 9 : *P. Gaultier*, Qu'est-ce que l'art ? *F. Le Dantec*, Les objections au monisme (2e et dernier article) ; *R. De La Grasserie*, Les moyens linguistiques de condensation de la pensée ; Analyses et comptes rendus ; Livres nouveaux.

RIVISTA DI FILOSOFIA E SCIENZE AFFINI, XV, 1–3 : *R. Ardigo*, I tre momenti critici nella storia della gnostica della filosofia moderna ; *F. Severi*, Problemi della scienza ; *P. Rotta*, D'una psicologia pragmatica della credenza ; *G. Marchesini*, Miseria e incongruenze della pedagogia nazionale ; *C. Ranzoli*, Per l'originalità del pensiero italiano ; *G. Mazzalorso*, La φιλία aristotelica ; *G. A. Colozza*, Storia dell' istruzione e dell' educazione ; Analisi e cenni di filosofia el pedagogia.

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[N. B. — (a) stands for original articles, (b) for book notices, (d) for discussions, (n) for notes, (r) for reviews of books, and (s) for summaries.]

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I. Professor James's Theory of Knowledge . . Professor A. K. ROGERS
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III. The Logical Issue of Radical Empiricism . Professor JOHN E. RUSSELL
IV. The Relation of Science to Concrete Experience Dr. EDMUND H. HOLLANDS
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